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THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION

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IMPERATIVE TO WIND UP CAMPAIGN FOR CENTRAL OFFICE BUILDING THIS MONTH

CONTRACTS must be let and construction started shortly if the building is to be completed before the expiration of the present lease. Otherwise, your Association will be forced to pay a very high increased rental for its present quarters.

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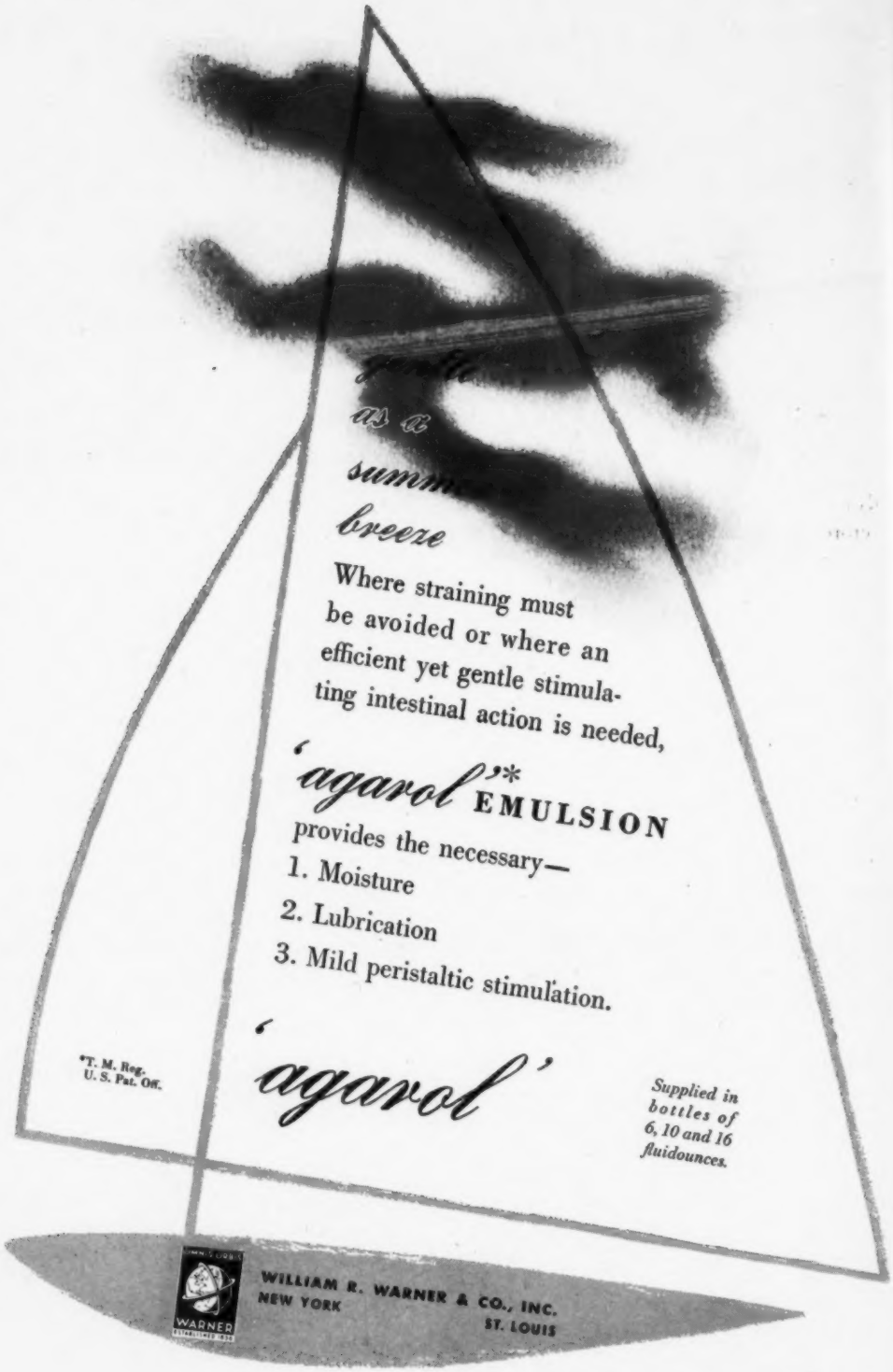
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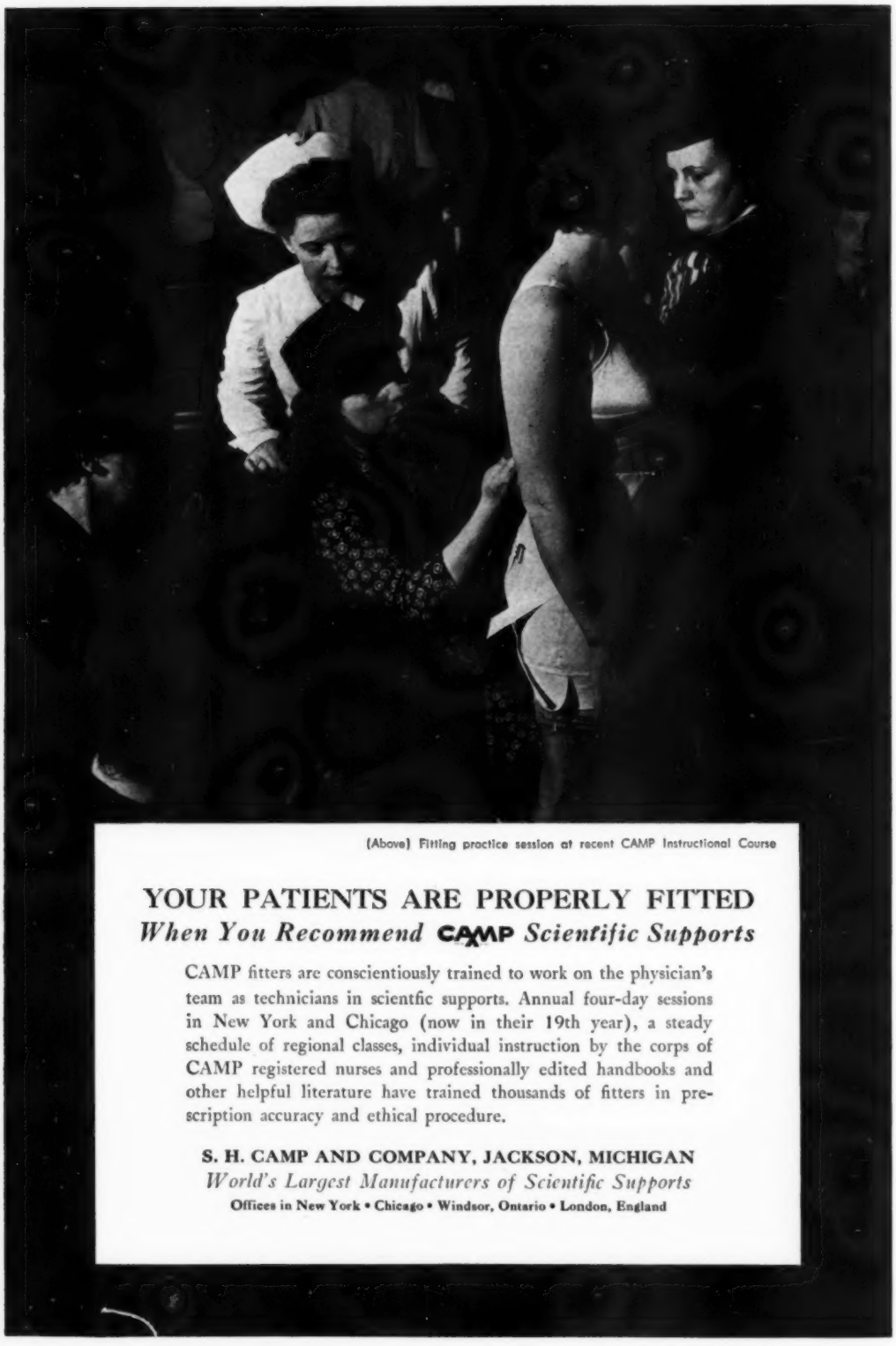

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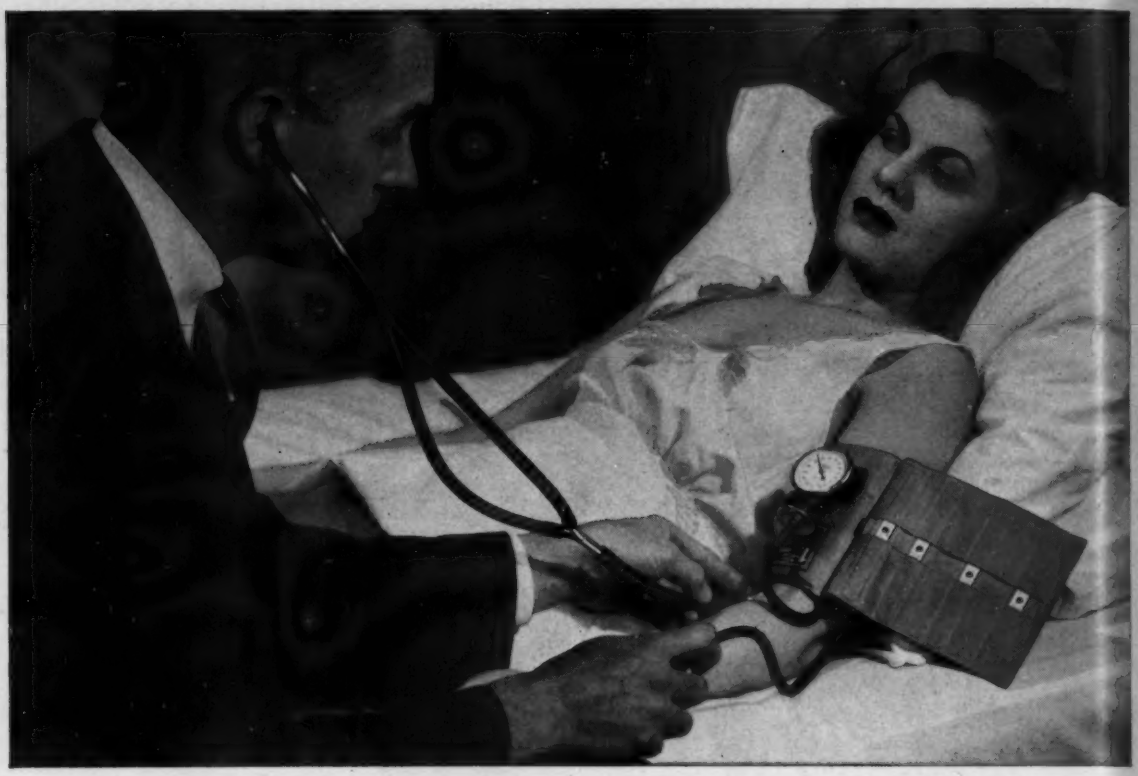

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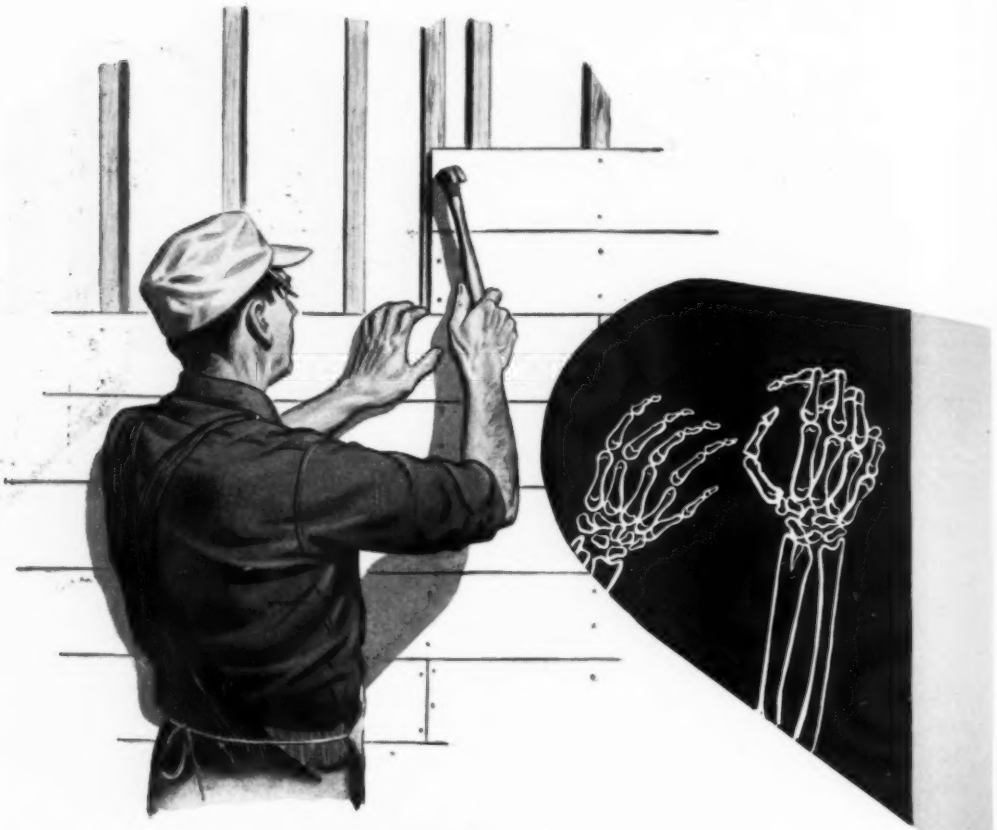

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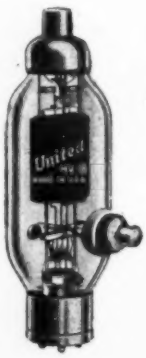

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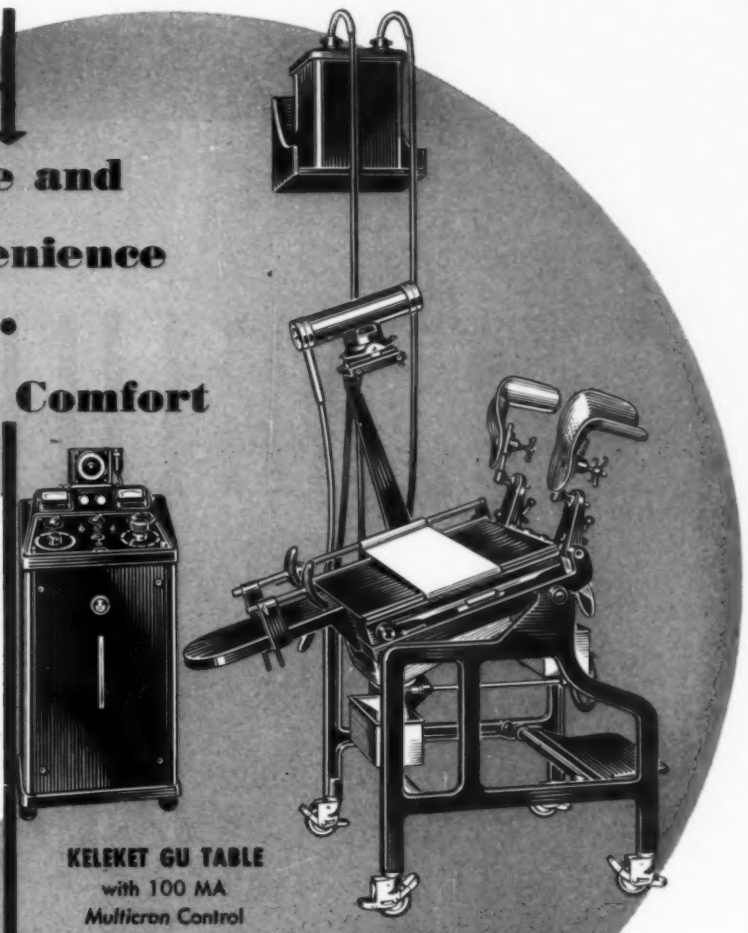

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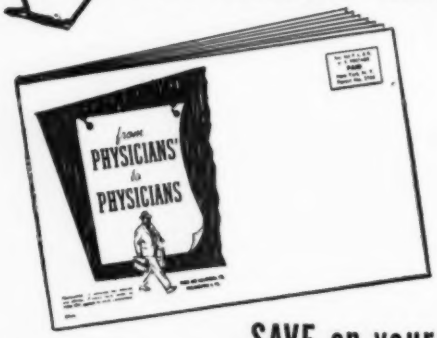

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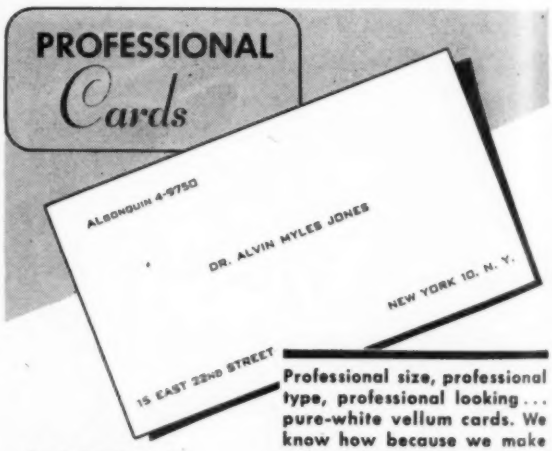

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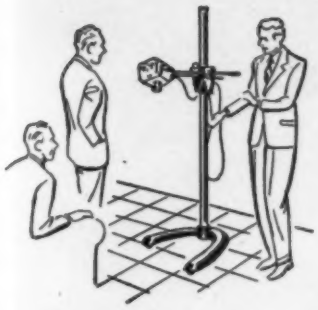

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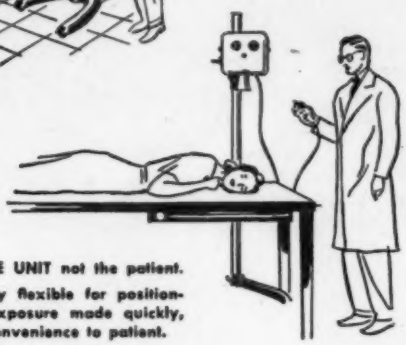

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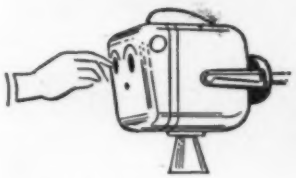

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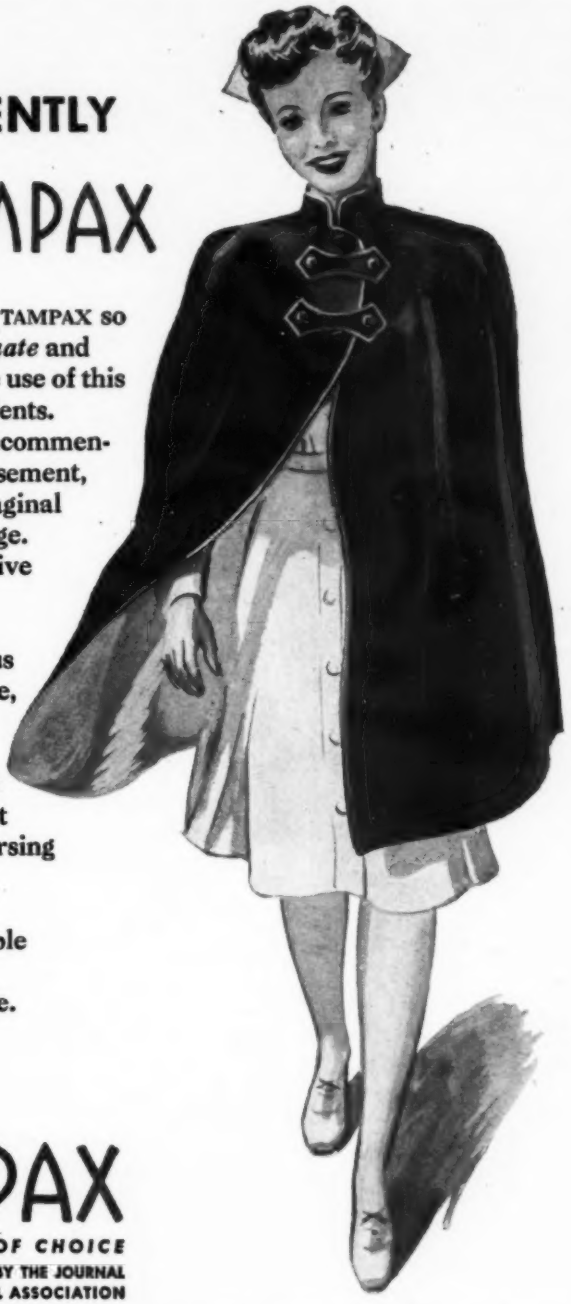

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1. J.A.M.A., 128:490, 1945.
2. Am. J. Obst. & Gyn., 48:510, 1944.
3. Am. J. Obst. & Gyn., 46:259, 1943.
4. West. J. Surg. Obst. & Gyn., 51:150, 1943.

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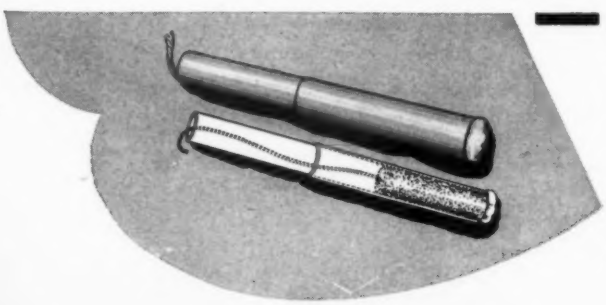

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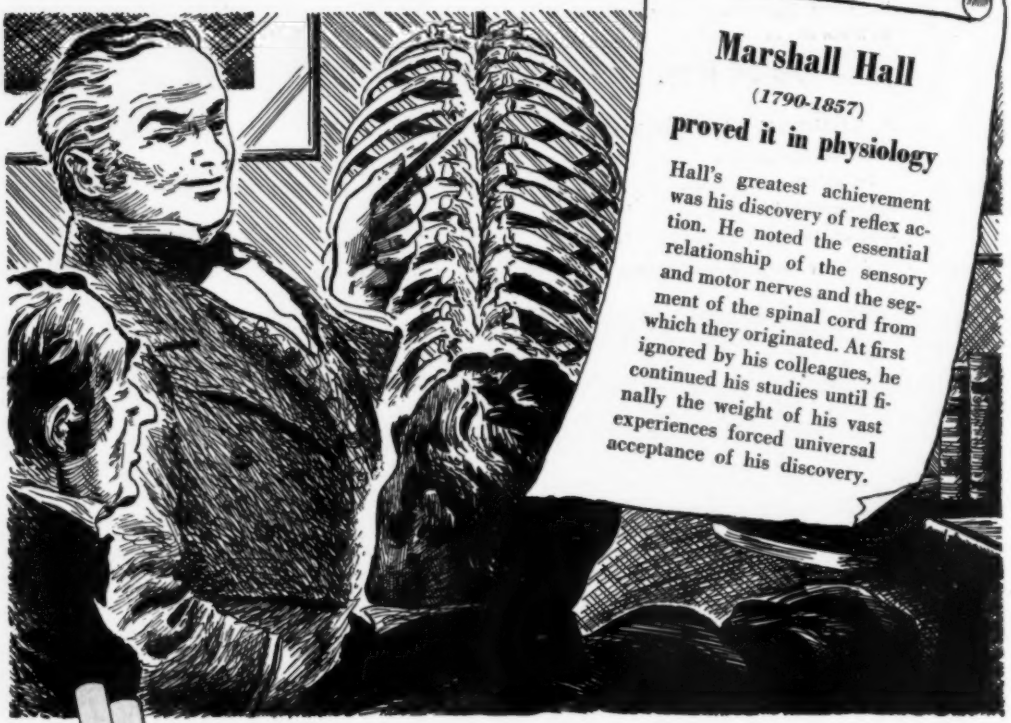

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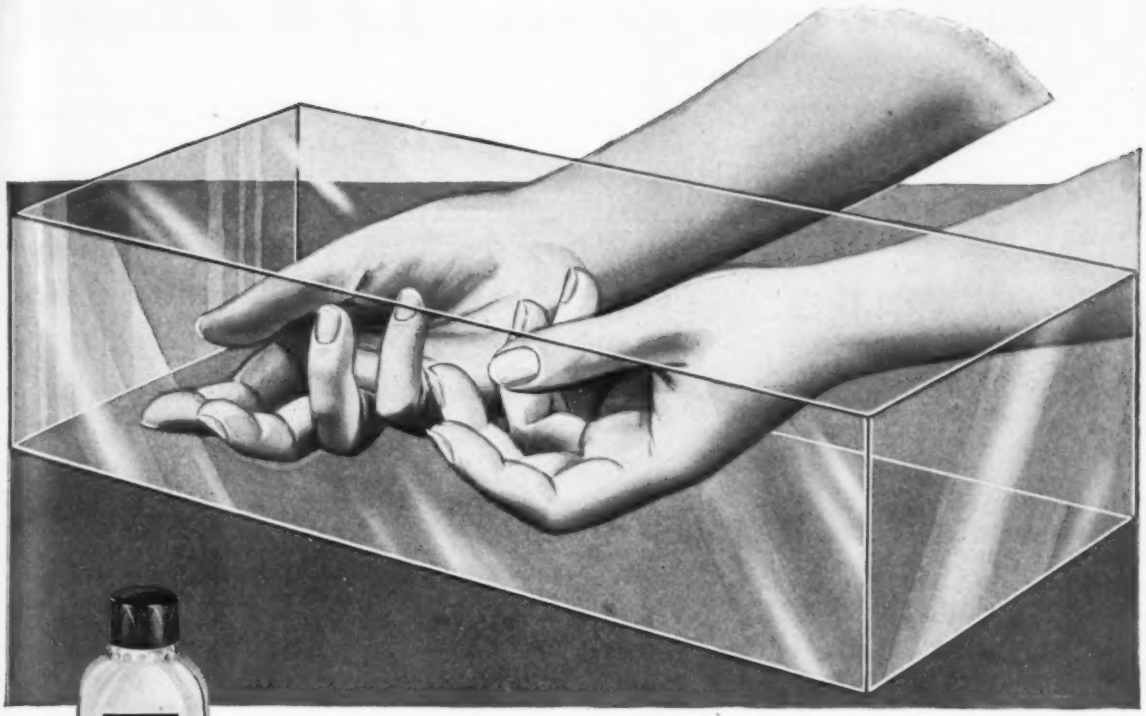

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Experiences With Laminagraphy

Report of a Case of Platybasia*

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Andrews in describing the visualization of a single layer of tissue termed this method body-section radiography. When Kieffer applied for his patent in 1929 he described his device as an x-ray focusing machine; later, in conjunction with Moore the name "laminagraph" was adopted. The laminagraph used both in the New York Osteopathic Clinic and in my office is a comparatively new development in radiography and differs in some important respects from all other models for body-section radiography. At this point, it might be interesting to note that when the State Department of Welfare recently inspected our Clinic, they praised us for our improvements and singled out as the greatest improvement the addition of the Kieffer type of x-ray apparatus. This is official praise indeed.

A study of the literature shows that in 1921 Bocage in France patented a machine which he called a biotome, but this remained theoretical and never got beyond the blueprint stage until it was perfected in 1938. In 1930 Vallebona constructed a machine which he called a stratigraph, wherein the tube and film were stationary but the patient was rotated on a revolving platform. This was a rather awkward method although it embodied the same fundamental principles underlying all types of body-section radiography.

The first practical machine in Europe was developed by Grossman and Chaoul in 1935 whereas the laminagraph we use was developed independently in this country in 1936. The machine of Grossman and Chaoul synchronized the movement of the film and the tube in a pendulum action during which the tube described an arc. Kieffer maintained that he discovered the principles of body-section radiography independently in 1928 and designed his practical unit in 1929. Speaking of his invention he says, "At that time I was entirely unaware of the previous work done by Bocage and others in 1922. On account of poor health, the beginning of the depression and the skepticism of men I tried to interest, I was unable to have the machine built until I met Dr. Moore in September 1936." He then goes on to say that Moore was impressed with the possibilities and persuaded the authorities at Washington University to finish its construction at the Mallinckrodt Institute. The first test was so successful that the machine was soon put to clinical use, and in the ensuing 2 years the laminagraph became one of the major developments in x-ray diagnostic methods. Since its use an extensive literature has developed on the subject, mainly because of resulting increased accuracy of diagnosis in many conditions which were heretofore obscure when examined by conventional radiography.

Moore, speaking of the fundamental principle involved in body-section radiography, said that it lies in the mathematical laws of light and optics (Fig. 1). He showed that if a recording medium and source of light were made to move synchronously in opposite directions about a fixed axis, the shadows of the object remained constant in size and in relationship to the source of light. If another object were placed in the beam of light and out of the plane of rotation of the light and the recording medium, its shadow would be inconstant in size, definition and relationship to the source of light. Thus it was only a question of time until the principles involved in visible light would be applied to invisible light or x-rays.

The first approach to the laminagraph by an individual who is accustomed to a conventional radiographic machine is confusing. However, familiarity with the use of the machine gradually dispels the confusion, and constant use leads to enthusiasm. The cardinal principle of body-section roentgenography is that the tube, film, and section to be roentgenographed shall be in relative motion to one another (Fig. 2). This would mean that the x-ray tube and film must move symmetrically in opposite directions and the section to be x-rayed be in constant focus. To simplify this still further, we might say that if we were unable to go through a part, we could go around it.

Body-section radiography, then, may be defined as that type of x-ray examination whereby a predetermined section, plane, or layer of the body may be visualized to the more or less complete exclusion of

*Read before the postgraduate study group of the New York Osteopathic Clinic, January 8, 1947.

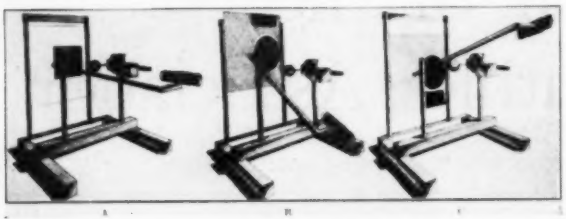

Fig. 1. Illustrating principles of body section radiography. (A) The cube and sphere are in alignment in a beam of light; the shadow of the cube obliterates that of the sphere on the recording medium. (B) The beam of light and the recording medium move on the same axis as that of the sphere; shadows of the cube and sphere are separated. (C) Reverse of the preceding movement.

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all other layers. The size of this predetermined layer usually varies between 2 and 5 mm.

There are many methods whereby this may be accomplished and each designer has reasons for considering his unit the most satisfactory. Those interested in evaluating the difference between various apparatus can refer to articles by Andrews, by Kieffer, and by Moore. The laminagraph, by virtue of its various component motions, is considered the ideal unit available at the present time.

Figure 3 is an illustration of Kieffer's early laminagraph, reproduced from Andrews' article, "Planigraphy, Introduction and History." Kieffer's description of the machine follows: "The roentgen tube (T) is mounted on rails so that it may be moved in any direction in a horizontal plane. Motion is imparted to the roentgen tube through a rigid system connected to a rotating disk (R) which is motor driven and by which means a circular or spiral motion may be imparted to the tube. The roentgen tube and rotating disk system are connected to the roentgen film (F) by a lever hung in gimbals (P). The motion of the roentgen tube and rotating disk system is therefore transmitted by the lever to the roentgen film (F) which, with a slotted diaphragm, is mounted on rails so that it also may be moved in any direction in a horizontal plane. The plane of the object which will be projected is determined by the position of point (P) which is adjustable on the lever and upright tube stand."

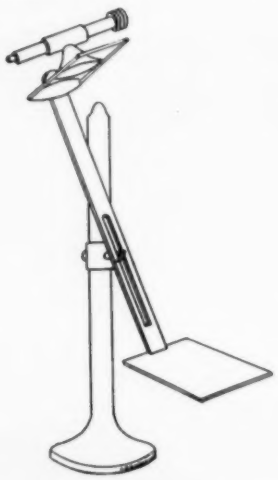

Fig. 2. Planigraphic method, "stratigraphy" (Vallebona). A pendulum-like arm is attached to the upright standard by a pivot, the height of which is adjustable. At the upper end of the pendulum the roentgen tube is fixed while at the lower end a cassette tray is fixed. The patient is placed on a table between the roentgen tube and the cassette tray.

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All types of body-section radiography displace underlying and overlying structures while keeping the desired level in sharp focus. This is one of its important differential departures as compared with conventional radiography. Due to the thinness of the layer in focus, and relative blurring of other planes, the marked contrast obtained in conventional films is absent on the laminagram. However, this is compensated for by the startling clarity of the desired object. The following clinical applications will make this apparent.

The uses of laminagraphy are still largely unexplored and apparently limitless. The literature on the subject for the last 10 years shows that the method was first applied to conditions in the chest. Today there are very few hospitals that treat diseases of the chest without recourse to some form of body-section

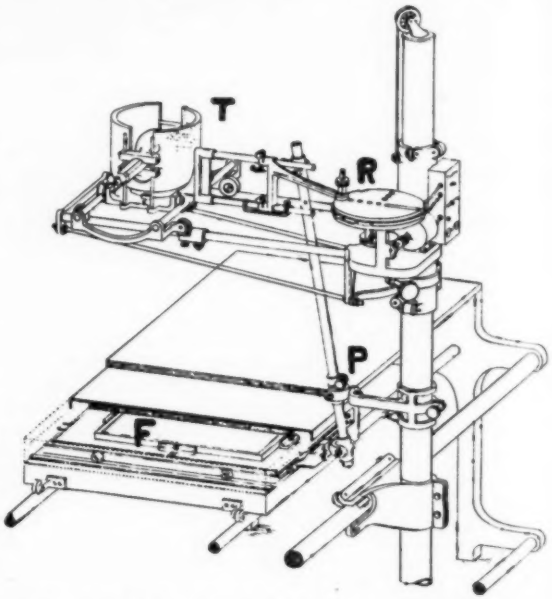

Fig. 3. Kieffer's early laminagraph. See text for explanation.

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radiography. Gradually other portions of the body were explored by different investigators. Howes demonstrated lesions of the larynx, Epstein lesions in the skull and sphenoid sinuses; others demonstrated lesions in the cervical portion of the spine, particularly at the atlanto-axial area. Smith and Miller described the use of the laminagram in osteomyelitis. Since it showed abscesses at different levels, it avoided the surgeon's treating just one abscess and ignoring the others which was frequently the case with conventional radiography. Another orthopedic use was the visualization of fractures through a cast. Lately Epstein and Davidoff have demonstrated its effectiveness in ventriculography which is particularly interesting since Moore in an extensive discussion on laminagraphy in Nelson's "Diagnostic Roentgenology" maintained that laminagraphy was unnecessary where contrast media were employed.

Although the use of laminagraphy is apparently limitless, nevertheless it has several disadvantages, the greatest being that studies require considerable

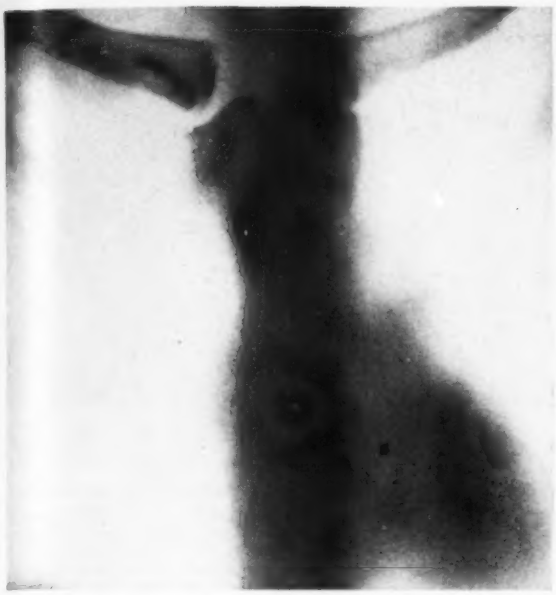

Fig. 4. Sternum in its entirety, anteroposterior view; also visualizes clearly the sternoclavicular joints. Note clarity of calcium focus which is at 2 cm. level in the anterior mediastinum.

care, training, and time. In addition the machine is expensive and the number of films necessary is considerably more than for ordinary x-ray studies. However, the fact that it helps make more accurate diagnoses outweighs all other values. It must be remembered that laminagraphy supplements conventional x-ray studies and its use is for cases which present difficult diagnostic problems.

The obvious use of laminagraphy is for the observation of isolated anatomical parts which under ordinary conditions are obscured by superimposed structures casting shadows and interfering with clear visualization as in the thorax. Here the parenchymal structures are partly obscured by the overlying anterior and posterior ribs and conversely, the viscera frequently cast unwanted shadows over the vertebrae and ribs. If one desires a clear postero-anterior view of the sternum, the spine, ribs and viscera superimpose, and if one tries to visualize the spinal joints in the thoracic area, it proves impossible by conventional methods since the component parts of the costovertebral joint obstruct clear vision. In passing one may point out the particular value of laminagraphy in the teaching of the regional anatomy in the living since this method takes one section of the body at a time.

Except for one tomographic film borrowed from a tuberculosis center, our material is based on 18 months' experience with the Kieffer laminagraph. (Tomographs are obtained by means of simple rectilinear motion whereas laminagrams are produced by a complex spiral motion which eliminates all parts in an unwanted plane). Our presentation will begin with a discussion of the chest. Cuts starting at the front of the chest take a section which clearly delineates the sternum and sternoclavicular joints (Fig. 4); by conventional radiography, it is not possible to show a postero-anterior view of the sternum nor can we satisfactorily demonstrate the sternoclavicular articulations. With laminagraphy, the overlying structures such as the spine, ribs, and heart, are completely blurred out.

Starting at the posterior portion of the thorax, one can easily demonstrate the spinous processes, then the ribs. Proceeding forward the vertebral bodies (Fig. 5) are demonstrated and finally at a deeper level one reaches the root of the lung at which point the bifurcation of the trachea into primary and secondary bronchi can be demonstrated together with the relationship of the pulmonary vessels to the bronchi (Figs. 5a and 5b). Such fine structural relationships cannot be defined by the usual x-ray methods.

Not only does laminagraphy help us discover pathological entities that are not visualized by ordinary roentgenography, it also prevents us from making errors in diagnosis such as mistaking for "glands" in the hilar region on the conventional film that which on the laminagram proves to be a prominent pulmonary

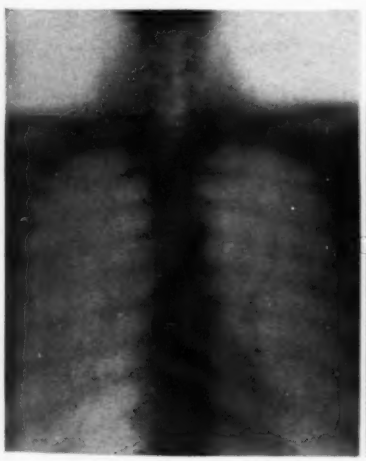

Fig 5

Fig 5a

Fig. 5b

Figs. 5. Laminagraph at 6 cm. level showing the posterior mediastinum. The ribs and vertebral bodies are clearly visualized. 5a. Same case at 9 cm. level showing the root of the lung with the bifurcation of the trachea; also visualizing branching bronchi and divisions and subdivisions of blood vessels. 5b. Same case at 10 cm. level still showing the root of the lung, some structures being clearer than at the 9 cm. level. Arrows point to the larynx which is clearly visualized.

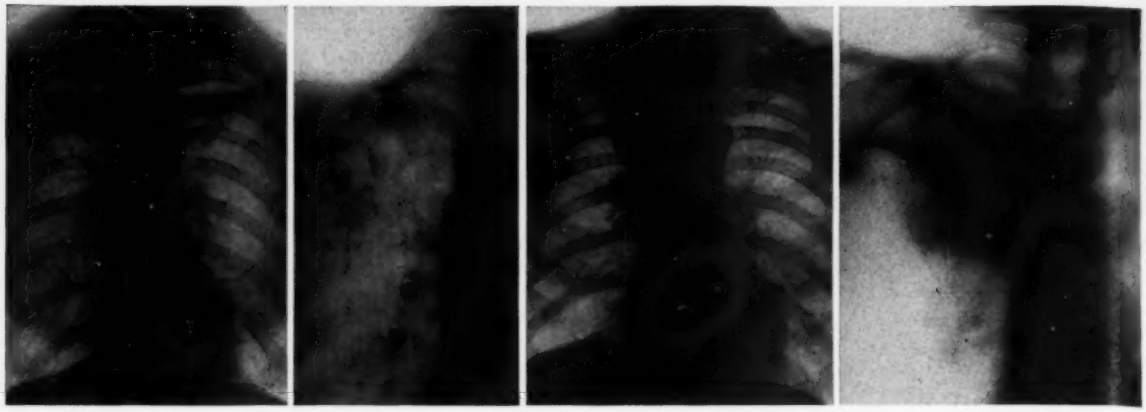

Fig. 6 Fig. 6a Fig. 7 Fig. 7a

Figs. 6. Conventional radiograph showing infiltrated area of the right upper lobe. No distinct cavitation is observed. 6a. Same case with cavity visualized by body section radiography. A cavity this large was not suspected. 7. Conventional film showing an atelectatic area of the right upper lobe. 7a. Laminagraphic method outlining the tumor in its entirety and showing invasion of the right lower lobe. Diagnosis was made preoperatively and confirmed at operation. Note elimination of rib shadows.

artery. Frequently from the conventional film, cavities in the lungs are suspected; many times these prove to be artefacts formed by blood vessels traversing an area at different levels, and just as frequently unsuspected cavities are demonstrated with the employment of body-section radiography (Figs. 6 and 6a). Pulmonary areas suspected of being atelectatic frequently are shown to be distinct neoplasms in the lungs or mediastinum, or both by the use of laminagraphy (Figs. 7, 7a, 8, 8a).

Doubtful cases of cystic lung disease may be verified by this method and differentiated from pleural shadows, localized pneumothorax, and subpleural emphysematous bullæ. Wilson demonstrated an opaque foreign body which proved to be a tooth obstructing the bronchus in a lung abscess; on the ordinary film, this was considered to be a calcified focus in the right hilum.

Lesions in the upper thoracic spine have ever been a plague to the roentgenologist and a tax on the ingenuity of the technician. Demonstration of lesions in the lateral thoracic spine is facilitated by dividing the study of this region into two parts; the upper three thoracic bodies and the lower cervical segments (Fig. 9) are studied separately from the thoracic vertebræ below the third (Fig. 10). Laminagraphic studies eliminate the overlying shoulder girdle and ribs, thus giving a clear view of the thoracic spinal joints and bodies.

Laminagraphy of the cervical portion of the spine and temporomandibular joints is a revelation. In the atlanto-axial region, by the use of proper sectioning, we are able to see the occipito-atlantal and atlanto-axial joints with a clarity which is unbelievable (Figs. 11, 11a). The overlying teeth, occiput, mandible, and

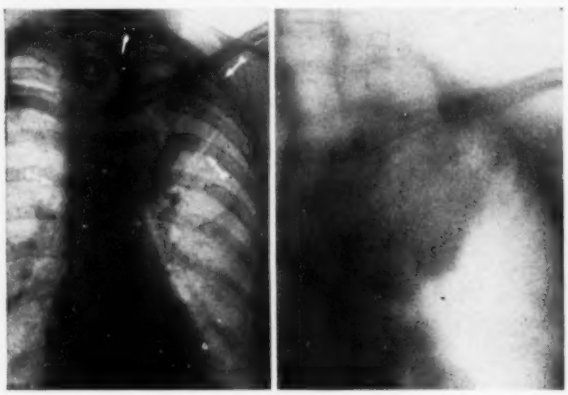

Fig. 8 Fig. 8a

Figs. 8. Conventional film showing atelectatic area in the left lung. Diagnosis indeterminate. 8a. Laminagraph outlines clearly the neoplasm occupying most of left upper lobe and mediastinum. Diagnosis was made preoperatively and proved at operation.

Fig. 9. Laminagraph of cervicothoracic region. Note elimination by blurring of clavicles, scapulæ, and ribs giving clear view of first, second, and third dorsal vertebræ.

Fig. 10

Fig. 11

Fig. 11a

Figs. 10. Laminagraph showing dorsal bodies clearly. Note clarity of articular processes to which arrows point. Ribs are completely blurred out. 11. Conventional atlanto-axial study. 11a. Same case. Laminagraph showing clearly occipito-atlantal and atlanto-axial joints. The occiput, teeth, and jaw joints have been blurred out. Note that upper portion of odontoid process is on a lower level than the occipito-atlantal joints.

maxilla are eliminated (Figs. 12, 12a). The temporomandibular articulations stand out in arresting contrast to the poorly defined view one sees on the conventional film (Fig. 13); no stunts or trick methods causing discomfort to the patient are necessary.

In the lower portion of the back, we are able to visualize each particular joint by selecting different levels. The sacroiliac joints can be clearly seen, fractures can be visualized, anomalies may be studied more satisfactorily and their exact nature more clearly understood. Asymmetries which are frequently thought to be calcium disturbances on the conventional film also can be more thoroughly evaluated (Figs. 14, 14a, 14b, 14c).

The accessory sinuses of the nose are a very fertile field for study by the level method. Using conventional radiography it is sometimes difficult to make an accurate diagnosis of conditions in the deep sinuses, namely the ethmoids and sphenoids (Fig. 15). In several cases we have been able to demonstrate clouding of these sinuses by laminagraphy when we were unable to do so by conventional films. The visualization of these cavities and associated structures by sectioning is so clear cut that the writer feels it will only be a question of time before laminagraphy will become routine in the diagnosis of recalcitrant sinus involvement. These studies may be made both by coronal and sagittal sections.

Fig. 12

Fig. 12a

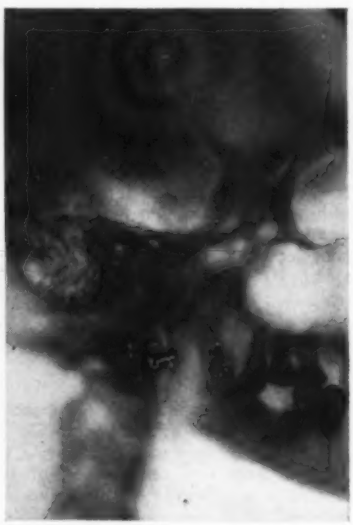

Fig. 13

Figs. 12. Laminagraph at 6 cm. level showing clearly the occipito-atlantal joints. Note joint on right side is narrowed and on left side widened, thus visualizing an occipito-atlantal osteopathic lesion. 12a. Same case at 7 cm. level visualizing atlanto-axial joints most distinctly. The one on the left is narrowed and the right larger. This suggests the probability of a compensating lesion secondary to the occipito-atlantal variation on the right. 13. The temporomandibular joint clearly visualized. Such clarity is impossible in any other form of radiography.

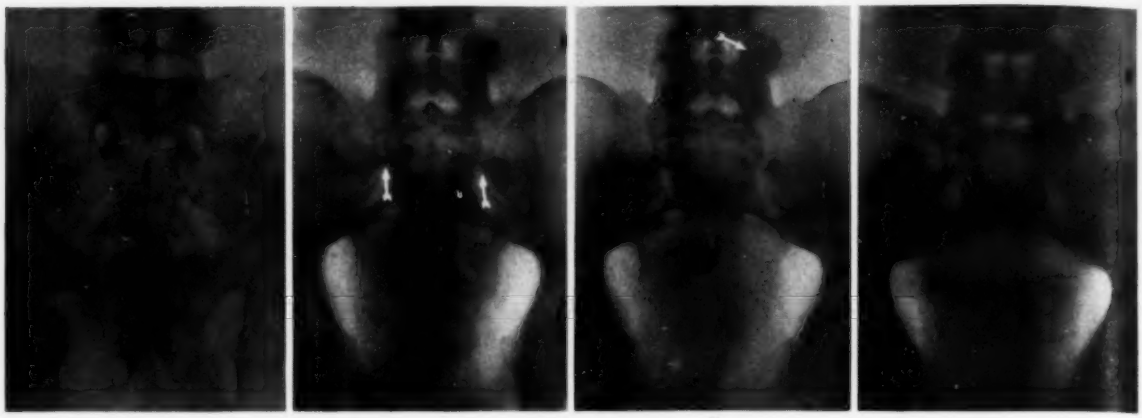

Fig. 14 Fig. 14a Fig. 14b Fig. 14c

Figs. 14. Conventional 15 degree view of lumbosacral region showing bilateral sacralization of the fifth lumbar vertebra. 14a. Laminagraph of same case at 5 cm. level shows spinous processes and rudimentary lumbosacral joints. The sacralization cannot be visualized. 14b. Laminagraph at 6 cm. level of the same case shows the spinal joints clearly, and the fusion of the transverse processes with the top of the sacrum. 14c. Same case at 8 cm. level. Note blurring of spinous processes, spinal joints and area of sacralization. The sacral promontory and sacroiliac joints are clearly visualized.

Another region difficult to demonstrate heretofore without torturing the patient was that of the petrous tips in mastoid disease. The bewildering confusion of superimposed structures in the skull can be resolved by selection of whatever area is desired for laminagraphic studies.

The following case presentation will serve to show how it is possible to analyze a difficult structural anomaly and also to report the demonstration of this anomaly, platybasia, for the first time by laminagraphy.

CASE HISTORY

Male, age 57, height 5 feet 2¼ inches, weight 96 pounds; unemployed chauffeur, was admitted November, 1946, with the chief complaint of pain of 6 months duration in the extremities and back. The pain followed the sciatic distribution in the lower extremities and radicular pain followed the ulnar distribution in the upper extremities. He gave a long history of various illnesses, characteristic of an individual constitutionally below average. Report of cystoscopic examination in 1930 revealed one kidney. The other was probably congenitally absent. Fracture of the right frontal and malar bone in an automobile accident in 1941 with complete recovery was reported.

Physical examination showed an asthenic male with a sallow complexion. No significant pathology was found in the head. There was an absence of the superior portion of each auricle; the jaws were edentulous. The lower cervical portion of the spine was enlarged laterally. There was tenderness on palpation of the lower part of the neck, and motion in the cervical region was restricted. The thorax was normal and other findings including blood studies and chemical analysis were normal.

Conventional x-ray studies showed six lumbar vertebræ with spina bifida occulta of the sixth. They were bilateral cervical ribs which fused with the shafts of the first ribs. There was a curve with the convexity to the left in the lower cervical area and the contour of the lower three cervical bodies was irregular. Anteroposterior view of the upper cervical area was not very clear, while the lateral view showed disk absorption between the second, third, and fourth cervical bodies (Fig. 16). The first cervical was somewhat obscured by the occiput and the odontoid process was above the level of a line drawn from the posterior margin of the hard palate to the posterior rim of the foramen magnum.

Laminagraphic studies were then done at levels of 6½, 7 and 7½ cm. from the table top with the patient supine (Figs. 17, 17a, 17b). At the 6½ cm. level there was noted a congenital absence of the upper portion of the lamina and pedicle on the right side of the axis. The atlas was not visualized nor were the other vertebræ in focus. At the 7 cm. level the malformed part of the axis was no longer in focus. The atlas was beginning to be visualized and the second, third, and fourth bodies were seen to be distinctly fused. At 7½ cm.

Fig. 15. Laminagraph at 8 cm. level shows clearly the sphenoid sinus in the center and at each side the deep ethmoid sinuses. Note the ethmoid on the left is slightly clouded. The sphenoids can also be visualized well in the lateral views.

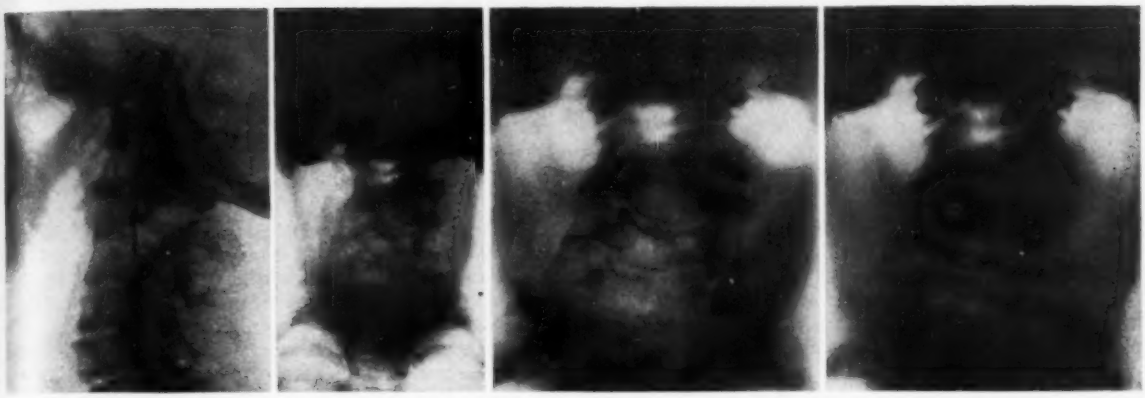

Fig. 16 Fig. 17 Fig. 17a Fig. 17b

Figs. 16. Conventional film of a case of platybasia showing the odontoid process high above the level of the hard palate and projecting deep into the foramen magnum. Note fusion of second, third, and fourth cervical bodies. 17. Laminagraph at 6½ cm. level showing congenital anomaly of the second cervical segment. The atlas is not visualized at this level. 17a. Same case at 7 cm. level visualizes the atlas and odontoid process and shows the latter to be high above the level of the occipito-atlantal articulation when compared with the normal. Platybasia is thus demonstrated, probably for the first time by laminagraphy. 17b. Same case at 7½ cm. level again showing the high position of the odontoid process and visualizing the comparatively low position of the petrous bones in relation to the atlas.

level the fusion of the bodies was again visualized and the atlas was seen distinctly and noted to be closer to the occiput and foramen magnum than is the case in the normal patient. The odontoid process was seen to be invaginated into the foramen magnum.

The diagnosis of Klippel-Feil syndrome with platybasia was made. As the name implies, platybasia is a flattening of the base of the skull and is usually a congenital anomaly of the occiput and upper cervical region. However, this may also be an acquired condition as a result of osteoporosis as in Paget's disease or rickets. Its chief characteristic is cephalic displacement of the odontoid and clivus. This may cause symptoms referable to the central system and simulate syringomyelia, multiple sclerosis, and cerebellar lesions.

COMMENT

The writer is reporting this case since, to his knowledge, it is the first instance of platybasia to be demonstrated by anteroposterior laminagrams and to show the distinct anatomical variations caused by this condition. Normally the level of the occipito-atlantal joint is well above the tip of the odontoid process and the petrous ridges appear as V-shaped structures. In platybasia, the odontoid is seen above this level and extends into the foramen magnum while the petrous ridges lose their V-shape and assume a drooping horizontal attitude.

SUMMARY

Laminagraphy has been discussed. Its chief value lies in the removal of shadows of overlying and underlying parts. It should be particularly valuable to the osteopathic physician in demonstrating sections of joints in puzzling cases, particularly where full information is not obtained by ordinary methods. This method affords an excellent opportunity for research in the demonstration of Still lesions.

For satisfactory studies of the sternum, certain chest conditions, temporomandibular, and upper cervical joints such studies are actually a necessity. New uses for laminagraphy are discovered constantly. The only objections to its use are that it is time consuming, expensive, and requires considerable training.

A case of platybasia visualized by ordinary lateral films of the cervical portion of the spine but more distinctly visualized, for the first time in medical literature as far as I know, by anteroposterior laminagraphic studies, has been reported. I feel that laminagraphy demonstrates the details of platybasia more satisfactorily than conventional radiography.

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TWENTIETH ANNIVERSARY YEAR OF HAROFE HAIVRI

The Spring issue of *Harofe Haivri (The Hebrew Medical Journal)*, a semiannual bilingual publication, inaugurates the twentieth anniversary year.

In the medical section, the following subjects are offered: "The Clinical Use of Streptomycin," "Anticoagulant Therapy in the Treatment of Thrombosis," and "Narcoanalysis and Narcosynthesis." Under the heading of historical medicine, there appears a treatise in which are discussed the classical pronouncements on medical ethics by Asaph who lived in the ninth century.

The original articles are summarized in English to make them available to those who are unable to read Hebrew.

Tilted Pelvis

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In the Ohio Refresher Course at Columbus, October, 1946, C. R. Nelson gave a series of lectures and demonstrations under the title, "Postural Analysis and Its Relation to Systemic Disease." The central topic of this excellent discussion was the laterally tilted pelvis and resultant spinal curvatures.

A note of appreciation to Dr. Nelson brought an acknowledgment by proxy from the late Dr. Ray G. Hulburt containing the statement: "This is a subject on which not enough has been said or written."

Inference from this remark is that the subject is one to which not enough consideration has been given by the profession at large. A belief in its fundamental osteopathic importance and a wish to inspire more general and serious thought about it have prompted the writing of this paper.

At the outset, while it must be presumed that most of us are familiar with the skeletal distortions concerned in the pelvic tilt syndrome, there seems no logical way to approach the subject without a fairly thorough analysis of this elementary matter.

As a starting point it seems well to copy Dr. Nelson's expedient of taking the assumption that the initiatory lateral pelvic tilt has just now, accommodatingly, occurred and that we are witnessing the resultant structural alterations in sequence, from their first stage —as pictured in Figure 1.

Starting, then, with a leftward pelvic tilt as shown, the first step is a slant to the left of the sacral base. A leftward tilt of the fifth lumbar vertebra follows inevitably because of two factors: the strength of the lumbosacral periarticular structures and the great weight of the body mass bearing down upon this point in the spine. These factors prevent the occurrence of any great degree of separation at the lumbosacral joint. The same factors, though in lessening degree upward, are still of sufficient importance to create a similar inertia in the spinal joints above it, and are of consequence in the general picture.

Therefore, the first step in the hypothetical picture is, so to say, a "pointing" of the whole spinal column leftward and upward. This poses an impossible condition, however, since it shifts the larger part of the body mass to the left of the mid-heel line. The body is therefore out of balance, and precisely at this point the subject's centers and functions of balance go into action. This incurs, of course, the immediate response of muscles, their function being exerted toward the end of pulling the displaced body mass back to normal status quo, that is, to the point where its center of gravity once more coincides with the mid-heel line, or lies within it. But this muscular effort also meets the difficulty of overcoming the before-mentioned inertia of spinal joints. The necessary separation of spinal articulation cannot be obtained in just one joint or even in two or three. It requires the area or span of several vertebrae to supply "give" enough to allow the body mass to be pulled back on center—the result being the curve shown in Figure 2.

It will be seen here that there is still a maldistribution of body weight. Note that the spine, having been warped into a curve which traverses the lumbar and lower thoracic segments, now crosses the mid-heel line at the top of the curve, from which point it is directed obliquely to the right and upward. Thus, though some portion of the lower trunk remains out of balance to the left of the mid-heel line, that portion is more than counterbalanced by the upper body mass now shifted to right of mid-heel line.

Since this posture calls for further adjustment, the muscles again go into action, this time to pull the spine, in its upper reaches, leftward, with the overall result shown in Figure 3.

Thus is pictured the double scoliosis, the orthodox outcome of gravitational force as exerted in the syndrome. In practice there are many variations, but it constitutes the main theme on which they are played. Often there might be added to Figure 3 a cervical

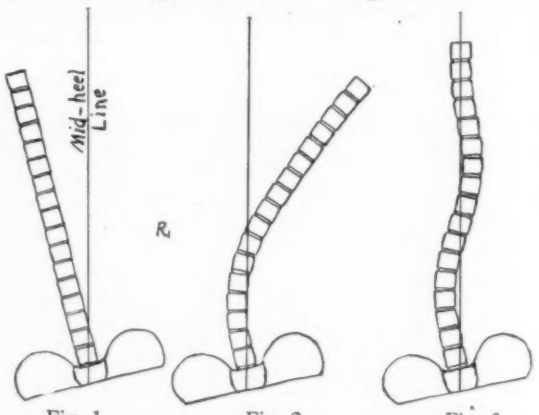

Fig. 1 Fig. 2 Fig. 3

curve back to the left. Again, the readjustment of balance is sometimes accomplished by means of several smaller curves to left and right of mid-heel line. But the objective is always the same: to equalize the distribution of body mass and weight on both sides of mid-heel line; to replace the center of gravity of the trunk in its normal position in that line.

The spinal picture in this syndrome is one of manifold complications from the viewpoint of the science of physics, per se. There is, of course, the elementary fact that the spine acts as the lever upon which force is exerted by the muscular element to obtain the necessary shifts of weight. But the spine is no rigid lever and cannot be classified in any one of the three orthodox types of lever named in a physics text. It is a flexible lever composed of twenty-four more or less movable segments. Further, it would seem that the various segments of this lever must act also as fulcrums—as so many fixed points on which the weight of the trunk rests as it is shifted by muscular action on the various planes and in various directions from the base upward.

Doubtless this also describes the mechanical functions of the spinal column under normal structural conditions, but obviously in this picture those functions are hampered materially by structural derangement. Resultant deviations from normal mechanics fall mainly into five classifications:

1. Hypomotility of spinal joint
2. Hypermotility of spinal joint
3. Disturbance of costovertebral, costochondral, and costosternal joints
4. Disturbance of pelvic joints
5. Disturbance of muscle function

Hypomotility is an inherent characteristic of lateral curvature, since within its scope the vertebrae are tilted. Tilting causes approximation of the joint facets on the concave side of the curvature, also a concentration of weight-bearing on these facets. Since, conversely, tilting also causes separation of the facets on the opposite or convex side of the curvature, there is a stretching of the periarticular structures on that same side. Similarly, the intervertebral disks are compressed on the concave side and stretched on the convex side of the curvature. These features vary in degree in the various segments, but the effect, in sum, is a partial fixation of those segments involved in curvature. Another possible factor may arise from the vertebral rotation which is incident to curvature, in that the involved joints, soft tissues, and disks may be subject to torsion, and thereby to increased tension.

With large sections of the spine in hypomotility, there are other, smaller areas where the previously mentioned causes of fixation are absent or at a minimum. These are marked by the points at which the spine approaches and crosses the mid-heel line—in other words, those sections located near the termini of, and between, the curvatures. Here, the included segments are forced to assume more than their normal share of the burden of necessary motion, and are therefore hypermotile.

In the costal involvement, rib joints to front and back are distorted, especially in the planes of curvature. There is tendency to rotation lesions of ribs, disturbance of interrelative rib position, tendency to approximation of adjacent costal surfaces leading to pressures upon intercostal nerves, and general disturbance of chest muscle action due also to disturbance of relative rib position. In severe degrees of curvature there is often marked deformity of the thoracic cage.

As to the pelvis in lateral tilt, a tendency to lumbosacral and sacroiliac joint strain is inevitable, this being caused by the abnormal oblique direction of weight pressure on these articulations. Hypermotility of the lumbosacral joint may develop. Also, there is frequent development of separation of the sacroiliac joint on the higher side of the pelvic tilt, with resultant hypermotility. On the lower side of the tilt, this joint is subject to jamming and strain because the center of gravity of the pelvis is often shifted toward that side and it therefore takes more than its normal half-share of the weight imposed from above.

Much less clear than the osseous-articular picture, is that of muscle involvement. Of prime importance here is the necessity of prolonged periods of splinting of the distorted axial skeleton. Bent as it is in two or more areas, there is constant tendency for these bends to be exaggerated under pressure of body weight, as long as the subject is standing erect, which with the average person is a good share of the 24 hours. The question arises as to whether involved muscles are able to keep up continuous tension during such long intervals. From available textbook information, and also from clinical observation, it seems evident that they can. According to the latest edition of Howell's "Textbook of Physiology,"[1] the inference is that, given the presence of continuously acting stimuli, muscle not only can maintain continuous contraction, but in such event may pass into a morbid state of extraordinary shortening which is irreversible. This is a qualitative statement lacking quantitative data—lacking information as to the sort or duration of stimuli required to produce the irreversible states—lacking guides leading to ideas as to which pathological states of shortening might be considered permanent, and which others, if any, might be reducible by appropriate treatment, osteopathic manipulation for instance.

In sum, it seems evident that at the present time research does not give answers useful to the osteopathic purpose. This deduction is borne out by the conclusion in Howell's "Textbook of Physiology" regarding one of the types of myopathy, namely that termed "contracture." David P. C. Lloyd,[2] who contributed the chapter on "Functional Activity of Muscle," writes, "One should not leave the subject of contractures without a word of warning to the effect that many of the foregoing possibilities are just that, and require much experimental verification yet to be advanced." Discussion and research on this subject by the osteopathic profession should be interesting and profitable, bearing as it would on that seemingly controversial matter, the muscular lesion and the relative importance of soft tissue manipulation.

Proceeding to discussion of etiology, the outstanding cause of lateral pelvic tilt is the short leg. It seems probable, from personal observation and from a great number of x-ray records that at least half the population, including the greater percentage of the ubiquitous low-back cases, is afflicted with this defect. Excellent postural x-ray studies made of my patients over a number of years by J. W. Keckler of Canton, Ohio, have shown with monotonous regularity at least a small difference in the comparative levels of the heads of the femurs.

As suggested by Dr. Nelson at Columbus, the difference in leg length may, in a large percentage of cases, be due to trauma sustained, at some time during the period of growth, to the centers responsible for the longitudinal growth of the long bones of the leg —namely, the junctions of epiphyses with diaphyses. Trauma at these points conceivably may retard or stimulate the lengthwise growth.

However, one must not forget foot troubles, existing in unilateral or in differential bilateral incidence, as a factor in short leg effect. The prevalence of weakened or fallen longitudinal arch, or pronation of foot, and bony anomalies of the foot must reasonably occupy a large place in accounting for differences in the height from foot sole to femur head. Tilting of the os calcis laterally or posteriorly on its articulations with the talus is frequent. Probably collapse of the metatarsal arch, or flattening of the transverse arch, or both, may be factors, especially as they may place abnormal strain on ligaments, particularly those holding the os calcis, talus, navicular, and cuboid in

assembly, thus aiding in tilting that foundational bone, the os calcis. Also, in an occasional case, I have found what appeared to be an underdeveloped os calcis. In one subject measurement from base to top of posterior surface showed a full ⅜ inch shortening in the left os calcis as compared with the right.

Of consequence also are those causative factors present in the pelvis itself. Of these, the most frequent is anomaly of the sacral facets articulating with the fifth lumbar vertebra, or of the joint processes on which these facets are mounted. Inequality here, though it does not constitute pelvic tilt in a strict sense, causes tilt of the lowest vertebra which initiates spinal curve in a manner analogous to tilt of the whole pelvis. Again, rarely, there is a tilt of the sacrum or entire pelvis, apparently due to some obscure anomaly of the ilia, or sacrum, or both, difficult or impossible to detect even with x-ray aid. Lastly, lest we forget, there is the time-honored sacroiliac lesion—the "slipped innominate" of yore. There is doubt, however, whether there often exists a rotated ilium of sufficient chronicity to initiate a settled spinal curve. No doubt the acute anterior or posterior rotation of the ilium creates strain and tendency to curve, because it certainly could cause a tilt of the pelvis. But experience shows that the acute ilial displacement is almost invariably correctable, or in time will right itself unaided—this barring cases due to exceptionally heavy trauma. As to any other apparent exceptions found, there would be legitimate doubt as to whether the ostensible remaining ilial tilt was indigenous to the sacroiliac joint or to the presence of pre-existing chronic pelvic tilt due to causes hereinbefore outlined. In fact, the whole preconception of rotated ilia, as diagnosed by malalignment of the ilial landmarks, is thrown into question because of the extremely frequent incidence of lateral pelvic tilt and of bony malformations in the lower half of the skeleton, including the ilium itself.

The prevalence of these bony anomalies has, from our standpoint, both fortunate and unfortunate aspects. Fortunate, because knowledge of their existence gives us a better background for diagnosis and treatment than in the years before we had that knowledge, or having it, failed to evaluate it properly. Fortunate again because their incidence, at least so far as vital structural disturbance is concerned, is practically confined to the lower part of the skeleton from the first lumbar segment down—whereas if they were commonly found more widely distributed they would make the prospect of accurate diagnosis and correction of structural defects a baffling and futile business. Unfortunate, because even as things are, the diagnosis and proper evaluation of all elements in this syndrome present difficulty enough, especially in cases of lesser degree, in which there is the less marked dislocation of skeletal landmarks, and if treatment is attempted without radiographic aid.

The typical physical picture in the pelvis and lower part of the back presents four main features:

1. Difference in level of iliac crests and spines
2. The mass of spinal structures laterally displaced in subcostal space
3. Lower ribs retracted on concave side, abnormally prominent on convex side, of curvature
4. Superficial tenderness of tissues on convex side of curvature and deep tenderness on concave side.

The low-back features are much more easily detected manually and visually than are those higher up, since the curve is usually more pronounced in the lower part of the back, and is more visible and palpable because no ribs are there to mask the picture. Further, as hereinbefore stated, there are many modifications of the usual double curve occupying the thoracic and lumbar areas, and these are very hard to outline, at least in the thoracic region, without the aid of x-ray. Added to the above features, there is almost invariably a series of joint lesions and rigid, sore muscles scattered throughout the entire spinal area. Often there is a well-defined curve in the cervical region, which will, incidentally, almost always be in the opposite direction to the topmost curve in the thoracic portion of the spine.

As to technic of physical examination for this syndrome, it is of course best to place the patient both in prone and standing postures. I have not found that the standing posture has any particular virtue over the prone, except in very young subjects whose spinal structure may not have become "set" into typical distortion. These latter cases may conceal in great degree either pelvic tilt or spinal curve while the weight is off the feet; if the basic trouble is short leg, they may show neither one. Finally, no physical examination is complete without thorough inspection of the feet. And, of course, there is no biological law to prevent the coexistence of two or more causes of the typical distortions of pelvis and spine.

In correct diagnosis and treatment of all cases having the less marked physical signs, and especially those with the atypical adjustments of spinal curves to weight balance, the use of radiography is imperative. In fact, x-ray examination is highly advisable in all cases. X-ray pictures will more than pay their cost to the patient in added "know-how" in dealing with his case, and hence in results obtained.

In consideration of treatment, it is well to bear in mind that it will apply mostly to the cases due to tilting of the normal pelvis by trouble located below it. Anomalies of pelvic bones constitute a problem in which changing of pelvic level, with a view to the essential levelling up of the fifth lumbar segment, may not be practicable because the pelvis may have to be adjusted to an off-level position to accomplish that objective. Treatment, then, becomes a matter of a doubtful compromise between existing bad spinal condition and possible strain of sacroiliac joints, though an occasional patient with fortunate coincidence of, for instance, inequality of sacral facets and a short leg on the side of low facet may be at least partially relieved by the customary employment of heel lift or other shoe alteration.

In treatment of pelvic tilt, it is my practice to make the correction slowly, since a too sudden and wide change in heel height may induce some little discomfort, especially in the older patients or those having rheumatic or arthritic tendencies. I therefore start with no more than a ⅛ inch correction and proceed with similarly small fractions until full correction is made. Thus the "set" of disk, ligament, and muscle, acquired in long enduring curvature is not too forcibly affected, but is molded into normal shape by easy stages.

The feet also may present a problem as we handle them in shoe alterations. As little as ⅛ inch lift to heel creates quite a difference in what my shoe

repairman calls "pitch" of the shoe, involving an appreciable shift of weight onto the forward part of the foot. This is not well borne by persons with a weak arch or pronated foot, or by overweight and elderly patients, or those with the frequent combinations of these conditions.

In order to forestall this ill effect, instead of using the heel lift alone, I often resort to one of four other expedients. First, for small elevations of ⅛ inch or less, a complete insole is used, provided a large enough shoe is worn to avoid crowding the foot. Second, where that is impracticable, an insert as long as is comfortable is employed, preferably extending forward from the heel to a point just short of the metatarsophalangeal joints, thus minimizing foot-tilt, and furnishing some measure of support to the arches. Third, if more than a ⅛ inch correction is called for, a layer of ⅛ inch or less, according to requirement, is taken off the heel of the opposite shoe—that of the long leg and high side of pelvis. This is particularly applicable to women's shoes in view of their higher heels. Fourth, if more than a ¼ inch total correction is needed, more may then be removed from heel of the long side; or additional elevation be given the foot on the short side, provided this lift is accompanied by a like addition to thickness of sole also, in order to avoid the forward pitch and footstrain.

In the presence of fallen arch or other foot deformity, an interesting possibility is the use of an arch support of the insert variety which may act also as a lift.

However, no matter how fully we cover the project of straightening pelvis and spinal base, and no matter how fine the result, treatment in this syndrome should not stop there. Though it at first seemed to me that a readjustment of the spinal foundations should cause a correction, after a while, of the spinal curves, the facts developed otherwise. At least, correction by this method alone bade fair to take such an unconscionably long time in the vast majority of cases that to wait for it was rather futile. The reason, after due reflection, seems to me as follows: The spine, once established in curved alignment, tends to be maintained in that alignment by the body weight, which exerts, so to speak, a leverage from both ends of the curve against the middle. This condition endures as long as the subject is standing erect, the result being to perpetuate previously established curvatures, even after they have had their original basic cause removed. In other words, the correction of pelvic level must be accompanied by active counter-forces exerted against the curvatures. This, in our language, means osteopathic manipulation. And manipulation is needed not only to speed up the accomplishment of curvature correction, but also to adjust the many articular and muscular lesions that occur in the syndrome, including those of the feet.

For curvature correction, the swinging leaf of the McManis table is invaluable. As a basic procedure, the subject may be placed prone and in conventional position on the table in treating the lumbar curvature; and for the thoracic curves, one or more, his position may be reversed, that is, with head toward the foot of the table. Thus, in each area, force aided by swing of the table may be exerted in a direction against the convexity of the curves.

As to pelvis, naturally any sacroiliac maladjustment or displacement of sacrum requires manual attention. And the presence of hypermotility of sacroiliac or lumbosacral joints as usual calls for the use of the sacroiliac belt, alone, or combined with spinal brace.

Foot troubles may respond to manipulation, exercise, or, of course, artificial bracing.

Measures taken at home by the patient are also valuable. Of these, the procedure par excellence is the simple business of hanging by the hands from a horizontal bar. The bar may be placed to best advantage only slightly above head height, so that the patient may keep his feet on the floor, with knees bent, thus allowing a nice adjustment of the amount of weight put upon arms and therefore of stretching force exerted on the spine. Conventional exercises of various types may be used also, according to discretion and the patient's abilities.

As has been emphasized before, in the nature of things, results must be rather slow, at least as far as marked structural correction is concerned. As in all long-term treatment, the patient's cooperation is the most uncertain factor in getting results. However, even allowing for that uncertainty, results are good—much better, for me personally, than during the many years before I became conscious of the prevalence of the short leg.

Conclusions based on some 5 years of intensive attention to the factors and connotations of this syndrome lead me to declare here that it has had no less than revolutionary influence on my concepts of osteopathic cause and effect. And after all this time it still seems to me an interesting—more than that, an astounding—thought, that so much distortion of so many human bodies can result from mere trifling inequalities in leg length. More astounding still is the recollection of the many years that elapsed before I became aware of the obvious fact that so many stubborn tilted pelvises were actually not correctable at all by manipulative means, and to the reason why they were not. Probably the most comforting thought of that era is that I wasn't quite as inept a bone-setter as I so long considered myself.

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AMERICAN PRACTITIONER

A new medical monthly, *American Practitioner*, is being published by J. B. Lippincott Company, Philadelphia. Its purpose is expressed in its motto, "Shortening the lag between experiment and practice." John B. Youmans, M.D., Professor of Medicine at Vanderbilt University School of Medicine, is editor and Rudolph H. Kampmeier, M.D., Associate Professor of Medicine at Vanderbilt, is assistant editor. The first issue appeared in September, 1946.

A CONTRIBUTION TO THE BUILDING FUND FOR PERMANENT A.O.A. HEADQUARTERS IS AN INVESTMENT IN YOUR FUTURE WHICH IS SURE TO PAY UNINTERRUPTED DIVIDENDS

Anal Anesthesia by Injection

FRANK D. STANTON, D.O., F.A.O.C. Pr.
Boston

Anesthesia by local injection seems without a sponsor. The advances made in the art of general and spinal anesthesia and the enthusiasm of the specialists in anesthesiology would make it seem that there was some sort of conspiracy abroad to discredit local anesthesia.

Since more and more anorectal surgery is being done in the office, anesthesia of the anorectal area by local injection is of increasing importance. In the hospital there are often times when local anesthesia in proctologic procedures has advantages. The establishment of anesthesia of the perianal and anal tissues by local injection is obtained by an effort of but a very few minutes. The hazards of all other forms of anesthesia are eliminated. In instances where local anesthesia may not be employed for one good reason or another we must make the next best selection.

Anesthesia of the anus is not obtained best by injecting the anesthetic solution into the muscles. Unless the skin is anesthetized either by intent or by accident the results will not be satisfactory. If, however, the anesthetic is properly injected under the integument of the perianal area and the anal canal there will be no occasion for injecting the anesthetic into the muscle.

Before inserting the needle into the skin, we apply carbolic acid. A stick of wood will hold enough of the carbolic acid to make a spot on the skin without a drop running off the end of the stick. When the stick is dipped in the carbolic acid the excess should be shaken off and the stick then applied to the skin at the point where the needle is to be inserted.

We use a 25 or 26 gauge sharp needle. The first insertion of the needle should not be *through* the skin, but as follows:

With the syringe properly loaded with anesthetic and the air expelled, the needle should be laid with the bevel side of the point against the skin and inserted, not jabbed, in such a way that it will pick up only the very superficial layers. The needle should be inserted sufficiently to bury the opening and a drop of the anesthetic injected "into the skin." The wheal which is thus established painlessly gives a desensitized spot where the needle may then be inserted *through* the skin. This starting point is usually in the right posterior quadrant about an inch outward from the margin of the anus. We proceed by injecting the solution under the skin to produce a larger wheal, a bulging area which causes some ischemia and shows us clearly the area occupied by the solution. The point of the needle is then moved farther along anteriorly. Injecting as we go and staying close to the skin, in the subcutaneous area, we continue until we can see that there is some anesthetic deposited under the entire skin of the right side of the perianum and outward to a distance of about 1½ inches. It is usually necessary to withdraw the needle from the point of original insertion and move over, making a new insertion farther anterior, being careful to keep within the area where the anesthetic can be seen distending the skin. In this manner the subsequent insertions of the needle will not be felt by the patient.

Now that we have taken care of the perianal skin on the right side we move to the left side, by carrying the anesthetic across the skin posterior to the anus. The needle is inserted at right posterior and a small amount of the anesthetic is carried under the skin until we cross the midline. No deep insertion is made here at this time. We follow around under the skin to the left side and repeat the procedure which we described for the right side.

The perianal skin now being injected to include an area about 1½ inches wide, we change to a 20 gauge 1½ inch needle.

With forefinger of the gloved left hand in the anal canal, we insert the needle through the perianal skin in the right posterior quadrant at approximately ½ inch from the anal margin. In teaching this subject, even when demonstrating it to doctors, we sometimes have difficulty in making it understood that the injection is to be made just under the integument of the anal canal — not into the skin, not into the muscle, but into the space between the integument and the muscular structures. The perianal skin already has been anesthetized, therefore the patient will not feel the insertion of this longer needle to a depth of at least ½ to 1 inch. From this point the anesthetic should be injected in small amounts just ahead of the needle as the needle is advanced upward under the skin and the transitional lining. The gloved finger of the left hand, which is in the anal canal, enables the operator to determine the location of the tip of the needle. The presence of the needle on the other side of the anal lining can be plainly identified by the operator. The bulge of the lining as the injection is made can also be felt plainly.

The needle having been inserted at the right posterior quadrant, the injection is carried upward to a point just beyond the pectinate line. Withdrawing a short distance, the direction of the needle is then changed and carried anteriorly but also upward and again to a point just above the pectinate line. In a matter of seconds the anal lining can be anesthetized in the entire area on the right. The needle is then withdrawn and inserted in the left posterior quadrant in the same manner as on the right side. A little experience will make it clear to the operator that it will not be necessary to make a separate insertion of the needle at the anterior limit of the anus. This area is well taken care of when the injections from the two sides meet anteriorly. The tissues are soft and very little manipulation of the needle completes the injection of the anterior areas. At this point a note of caution might be in order. Some operators anesthetize far beyond the anal tissues anteriorly. Sometimes they find that they have interfered with the mechanism of the bladder, causing patients to have difficulty in urinating.

When the two sides are completed, we withdraw the needle and insert it posteriorly about ½ inch from

the margin of the anus, that is, in the posterior cleft but close to the anal canal. The finger still in the anal canal guides the operator in advancing the needle upward. One of the reasons for leaving this area until last is that painful and sensitive conditions often exist here and that part of the anesthetization already completed usually gives considerable block anesthesia. If, as the needle is inserted upward in the midline, a small amount of the anesthetic is injected ahead of it, no discomfort will be caused to the patient.

Amounts of anesthetic varying between 10 cc. and 30 cc. will be employed for this procedure. We sometimes have instances where only 5 cc. are injected. Much depends on the type of patient and the pathology. If the patient has large marginal redundant formations of skin with considerable prolapse of the anal and rectal lining, more anesthetic will be needed in order to distend these tissues. Unless the entire perianal area is somewhat distended with the anesthetic the operator will not be sure that anesthesia has been established. Operators attempting this technic for the first time or times should endeavor to follow the details as described. Modifications and elaborations will necessitate the use of greater amounts of anesthetic and time than necessary. The amounts which we use are less than one-third the safety margins laid down by the manufacturers.

Premedication is a simple matter. At our clinic a patient is given a capsule of amytal and aminopyrine about 20 minutes before anesthesia is started for the operation. In usual cases this is all the medication which the patient receives while he is at the clinic. Occasionally a patient who is nervous or apprehensive and unable to be quiet on the operating table is given pantopon, ⅓ gr., in the buttock. This, in addition to amytal and aminopyrine, usually works wonders.

In the hospital about the same procedure is followed. Some patients must be hospitalized because they belong to the Blue Cross. The patient insists on the hospital because he feels he is entitled to it. The Blue Shield rules require hospitalization. Claims will not be paid unless the patient is in the hospital. These strange circumstances, we believe, will be corrected.

In the hospital we give the patient one capsule of nembutal, gr. 1½, about bedtime the night before the operation. In the morning after a light breakfast and about an hour before operation he is given another capsule of nembutal, gr. 1½, plus empirin compound and codeine, gr. ½. This medication seldom interferes with the patient's walking from his bed to the operating room and again from the operating room back to his bed. Patients who walk both ways seldom have urinary retention. Patients are required to use toilets. Since they will be going home in 1 or 2 days they are trained to wash with soap and water and to change their own dressings.

Hilton's law states that a nerve trunk which supplies the muscles of any given joint also supplies the muscles which move the joint and the skin over the insertions of the muscles. To paraphrase Hilton: The nerves supplying the anorectal musculature also supply the skin of the anorectal region.

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The Eczema Group of Skin Diseases

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The catch-basket diagnostic category in dermatology is "eczema." The first important step in a discussion of this subject is a realization that the term is merely a descriptive one, applied to a group of skin diseases which are similar on a morphological and clinical basis, and does not denote a disease entity. Therefore, these skin conditions which are diagnosed frequently as "eczema," should be considered as separate diseases and classified on a causative rather than on a morphological basis.

According to the older concept, eczema was considered to be a disease entity of internal origin[1] and was described according to its clinical appearance—eczema rubrum, eczema papulosum, eczema squamosum, etc. Clinicians began to realize that the so-called "eczema" could be separated into definite dermatoses. With increased knowledge regarding causes and better interpretation and classification of symptoms, first one and then another disease which possessed a characteristic and definite nature were extracted from this group, until today the term "eczema," used alone and unqualified, has an empty meaning. The term describes a more or less characteristic form of cutaneous reaction. Clinically this reaction consists of erythema, edema, papulation, vesiculation, oozing, crusting, lichenification, and scaling. Practically always it is accompanied by pruritus. The histological picture is one of the intraepidermal edema, vesiculation, acanthosis, parakeratosis and accompanying inflammatory changes in the cutis. Therefore, the diseases of the eczema group may be similar both from a histological and morphological standpoint.

It is true that, although the various diseases of the eczema group may resemble each other, the expert can usually distinguish them on clinical grounds. However, even he, at times, must resort to other methods and further investigation, such as skin and laboratory tests and careful evaluation of the history and symptoms. Occasionally lengthy observation and study are necessary to establish a diagnosis.

Many writers today limit eczema to eruptions of proved or known hypersensitivity to external contact. Such a limitation greatly decreases the number of dermatoses which can be placed in the eczema group and may be a satisfactory method of removing the term from general usage. Since, however, the laity, the general practitioner, and even some dermatologists continue to use "eczema" to describe cutaneous reactions produced by a number of causes,[2] we believe that this fact should be considered and its limitations brought to light. Therefore, if a skin disease possesses certain typical characteristics it may be called "eczema," but it should be qualified as to type. It is on this broad basis that the following classification of the eczema group is made:

This paper was prepared by Dr. Stover as partial fulfillment of the requirements for graduate training in dermatology and syphilology under the guidance and direction of Dr. Cressman, Professor of Dermatology and Syphilology, Philadelphia College of Osteopathy and Surgery.

1. Allergic-contact eczema
2. Seborrheic eczema
3. Nummular eczema
4. Atopic-neurodermitic eczema (disseminated)
5. Circumscribed neurodermitic eczema
6. Infectious eczematoid dermatitis
7. Eczematous drug eruption
8. Mycotic eczema
9. Stasic-varicose eczema
10. Infantile eczema

The importance of this group of skin diseases should not be underestimated as they predominate among those seen by the general physician and rank with the common cold as the most frequently encountered of all human ailments.

ALLERGIC-CONTACT ECZEMA

Synonyms.—Dermatitis venenata, contact dermatitis, eczematous dermatitis.

This form of eczema plays its greatest role in relation to occupations and in industry where its hazards are well recognized. Many hours are lost by employees, jobs are changed, and even trades and professions must occasionally be given up because of this incapacitating dermatosis.

In allergic-contact eczema the skin reacts to an external irritant which nearly always reaches the epidermis from the outside but, occasionally, may reach it from the blood stream after ingestion, injection, or inhalation.

Fig. 1. Allergic-contact eczema.

Mechanism of Reaction.—There are three different groups of causative agents, each of which produces its reaction in the skin by different means. First are primary irritants, such as caustics and acids, which produce response by direct action without previous sensitization or development of allergy. Second are the allergens, extremely numerous and varied substances, which produce specific hypersensitivity or allergy. A previous contact with the specific substance is generally believed necessary before the succeeding contacts will produce the allergic reaction. In this group are simple chemicals, such as dyes, metallic salts, local anesthetics, plants, and cosmetics. The third group consists of physical agents such as heat, sunlight, scratching, cold, pressure, friction, and moisture.

In some individuals there is a certain predisposition or susceptibility to this type of eczema; that is, some persons become more readily sensitized to numerous and varied allergens than do others. Many factors, however, may play a part in this variability in the development of allergic-contact eczema, among which are excessive heat, sweating, maceration, trauma, and moisture. But with all other factors being equal, the greater the quantity and the longer and more intense the exposure to an eczematogenic agent, the greater the incidence and severity of allergic-contact reactions. The reason for the great difference in individual susceptibility to allergic sensitization is unknown. It does not tend to be familial—a point differentiating this type from atopic-neurodermitic eczema which often appears in several members of one family, along with hay fever and asthma.

Most cases of allergic-contact eczema clear up readily with the removal of the offending substance from contact with the skin and with the instigation of mild antieczematous measures. Occasionally the condition persists long after all contact with the original irritant has ceased. The concept of autosensitization has been offered to explain this—the idea that the patient has become sensitized to products of his own damaged cells.[2]

The eruptions in allergic-contact eczema are not confined solely to the parts which contact the offending substance. Severe reactions may spread rapidly to other parts and may even involve the entire integument. If this is not understood, the diagnosis will often be missed. Several explanations might be advanced: (1) Such reaction may occur as an autosensitization to exudate or to the products of damaged cells; (2) it may be one of transepidermal allergy, that is, an allergenic substance contacted by the integument is absorbed and carried by the circulating body fluids to distant parts there to provoke a reaction, and (3) the reaction can be due to neurovascular reflex mechanism. It is our belief that all of these reactive mechanisms can and do occur.

Diagnosis.—This eczematous process can affect any and all areas of the skin but, since it is a reaction to external irritants, the areas usually involved are those of greater exposure, such as the backs of the hands (the palms are usually protected because of the thick horny layer), forearms, face, and neck. However, though the eruption appears first at the site of greatest exposure, it may be found in other areas, depending upon the irritant. If it is a reaction to shoe leather or dye, the dorsa of the toes and feet will be involved; a hat band will affect the forehead, and a dress, the periaxillary, antecubital, chest, and neck areas. Cosmetics or nail polish will usually affect the face, particularly the eyelids.

In many cases of allergic-contact eczema, the nature of the condition is apparent if one considers the history of possible exposure, the location, involvement of exposed surfaces, edema (severe edema if loose tissues such as the eyelids and genitalia are involved), and the appearance of close-set, small, shiny vesicles. All of these are distinguishing characteristics. The eruption is diffuse with irregular margins and, in the acute stage, the picture is one of erythema, edema, vesiculation, and oozing, while in the chronic stage the skin is papular, thickened, lichenified, and scaling. Pruritus is usually severe and a burning sensation is frequently present.

The patch test is most important in diagnosis and in determining the substance or substances to which the patient may be allergic. The materials suspected are

placed in their proper concentration in contact with the skin (usually the upper arm), covered first with oil-paper or cellophane and then with adhesive tape. The patch is left in position for 24 to 48 hours and then removed. The area in contact with the suspected irritant is examined for erythema, vesicules, or papules which indicate allergy to the tested material. This test should not be performed until after the acute stage of the disease has passed because of possible flare-up and spreading of the eruption by contact of the testing material.

The positive patch test merely means that the patient is allergic to the tested material and not necessarily that this material is the substance producing the eruption. The unequivocal proof is return of the allergic-contact eczema upon re-exposure of the patient, after complete healing, to the suspected substance under the same conditions as the previous exposure.

SEBORRHEIC ECZEMA

Synonyms.—Seborrheic dermatitis, seborrhea corporis, pityriasiform and psoriasiform eczematoid.

Seborrhea merely means excessive oiliness of the skin and is due to hyperactivity of the sebaceous glands. These glands usually undergo increased activity with the advent of puberty. The areas where they are numerous, such as the face, scalp, chest, and upper back, take on an oily appearance. If this process is limited to increased oiliness, it is called seborrhea, but if it becomes secondarily infected, it is seborrheic eczema.

Mechanism of Reaction.—The etiology of seborrheic eczema is controversial. Among the factors thought to be responsible are:

1. A constitutional diathesis in which there is an inherent hyperfunction of the sebaceous glands with excessively oily skin, producing a fertile ground for the establishment of secondary infection. This constitutional diathesis, which infers functional instability of the skin with all its ramifications, such as vasomotor instability, secretory dysfunctions, lowered resistance to infection, and hypersensitivity to external irritants, is believed by some authors[3] to be the primary cause of this dermatosis.

2. Infection by Pityrosporum ovale, a yeast-like organism, usually saprophytic but believed to be capable of becoming pathogenic under certain conditions in seborrheic areas. This is a plausible theory and has much to commend it as shown in the works of modern investigators.[4]

3. Endocrine disturbances. The frequent development of seborrhea at the time of puberty points to the possible relation between the sebaceous and sex glands.

4. Other factors. Included in this classification are high fat intake, obesity, excessive perspiration, and possibly secondary invasion by pyogenic organisms.

There is no definite proof substantiating the idea that a single factor is the cause, and, in all probability, more than one factor is necessary for the development of seborrheic eczema. The most important agents in the causative role are probably the seborrheic state and the organism, Pityrosporum ovale, with the other factors relegated to secondary roles.

Diagnosis.—The lesions of seborrheic eczema occur as patches of yellowish red macules which may become confluent to form rounded, polycyclic or petaloid plaques covered with loosely adherent, yellowish, greasy scales. The usual locations are in the seborrheic areas (those parts of the body where the oil glands are numerous and well-developed), such as the scalp, forehead, eyebrows, sides of nose, ears, chest, axillæ, and upper back. There is also a bilateral, symmetrical, exudative eruption involving the areas mentioned, the flexural surfaces, the umbilicus, the postauricular region, and the axillæ. It begins as an erythematous scaly patch and later becomes moist. In all probability this belongs under the classification of neurodermitic eczema, although many writers include it with seborrheic eczema. Its slow response to therapy, sudden exacerbations, severe pruritus, frequent bilateral involvement, recurrences, and various other characteristics all point to the neurodermitic type.

NUMMULAR ECZEMA

Synonyms.—Orbicular eczema, parasitic eczema.

We have mentioned that a descriptive adjective is often used to designate a type of eczema. In this case the term "nummular" is used to describe coin-shaped erythematous plaques consisting of small vesicles or papulovesicles. The vesicles are thin-walled and easily ruptured. Therefore, they are hard to demonstrate, but often ooze and form crusts. The plaques vary in size from ½ inch to many inches in diameter, the average being the size of a silver dollar.

The favored location and distribution are the dorsa of the hands, extensor surfaces of the arms, the extensor and outer aspects of the legs and thighs, and the dorsa of the feet. Pruritus is usually quite severe, especially at the outbreak of new lesions.

The cause of this rare eczema is unknown, but it has a strong tendency to recur, particularly in previously involved spots, resembling a fixed drug eruption. Factors which seem to aggravate or predispose toward these outbreaks include, according to Sulzberger and Wolf:[5] (1) External irritants such as soap, water, chemicals (not related, however, to allergic-contact eczema); (2) winter weather (recurrences more common in this season), and (3) foci of infection. Some cases may not respond until these causes are removed.

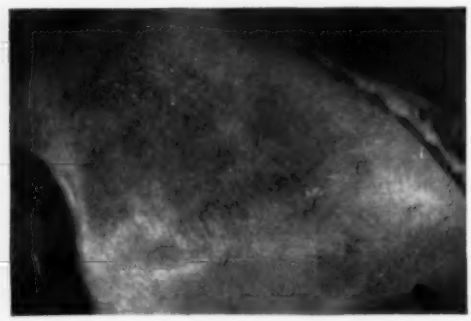
In conclusion, we might say of nummular eczema that it is a definite clinical entity of distinctive appearance and unknown etiology; it is slow to respond to therapy and has a tendency to recur.

ATOPIC-NEURODERMITIC ECZEMA

Synonyms.—Lichen simplex disseminatus, disseminated neurodermatitis, exudative eczematoid dermatitis, atopic dermatitis.

This member of the eczema group is imperfectly understood, particularly so far as cause is concerned. Two major schools of thought have developed; one stresses the psychoneurogenic factor,[6,7,8] and the other advances the concept of specific vascular skin hypersensitivity to allergens.[9,10,11] Both schools have evidence in favor of their views but neither has conclusive and unequivocal proof.

Mechanism of Reaction—The group which stresses the psychoneurogenic factor labels this disease neurodermatitis and attacks the problem from this standpoint. They consider the constitutional inheritance of these patients and usually find an underlying neurocirculatory instability with various abnormalities that could be classed as vagotonia, sometimes as sympathicotonia, and often combinations of both. The general signs and symptoms are: Easy fatigability, symptoms of neurasthenia and psychasthenia, nervous irritability or depression, hyperkinesia, and symptoms of nervous exhaustion. Various other functional diseases coexist in



Figs. 2 and 3. Atopic neurodermitic eczema.

these patients, such as migraine, gastrointestinal disturbances, vasomotor rhinitis, and asthma.

Although the underlying constitutional background is of utmost importance, precipitating factors play a prominent role. The year-round activities of the child of today and the stress and strain of high tension work that the adult must maintain, in addition to his social obligations, marital and economic difficulties, add to the exhaustion of an already high-powered and overactive nervous system. Social studies made on this group of patients showed a great number to be socially maladjusted.

The second group of clinicians believes this condition should be called atopic dermatitis or eczema, as this designates a certain form of allergic hypersensitivity. Susceptibility to this particular type of sensitivity is characterized by familial occurrences, the finding of Prausnitz-Küstner antibodies (also called atopic reagins) in the blood serum, and a high incidence of other allergic diseases such as urticaria, asthma, infantile eczema, and allergic vasomotor rhinitis, in the familial and personal history. Of large numbers of these patients given skin tests by the scratch method, 50 per cent gave positive reactions to foods and environmental allergens. As a group they manifest as strong and as polyvalent hypersensitivity as is found in asthma and vasomotor rhinitis. A high percentage of passive transfer reagins, or Prausnitz-Küstner antibodies, was found.

These observations indicate strongly that this dermatosis belongs to the atopic group but conclusive proof is still lacking since this eruption has not been reproduced regularly in these individuals by exposure to their allergens as have hay fever and asthma. Furthermore, the removal of the proved allergen does not, in most cases, clear up the eczema.

Since there are strong points in favor of each concept of the cause of this dermatosis, but neither has been conclusively proved, the proper approach in understanding and management requires recognition of the possibility that both the neurogenic and allergic factors play a part in its production. If, in cases where allergy is suspected, the eruption clears up after removal of the causative allergens from contact with the patient and recurs on repeated contact, proof of allergenic etiology is conclusive. On the other hand, no allergens may be found, but a careful history with discreet questioning may bring out a psychoneurogenic factor which, if not the sole cause, plays a most important etiologic role. These eruptions often develop or flare into greater activity when the patient is exposed to nervous and emotional strain.

Diagnosis.—In a description of atopic-neurodermitic eczema three phases may be considered:[10] (1) infantile, (2) childhood, and (3) adult. These stages may be continuous, one following the other, with exacerbations, remissions, and varying periods of freedom. In a large per cent of patients having the infantile form the condition disappears and does not recur. However, many will have years of freedom only to develop symptoms in adulthood.

1. The infantile phase of atopic-neurodermitic eczema develops at 3 months or older, and usually subsides by the age of 2 years. In the majority of instances, the familial history will reveal that one parent has had infantile eczema, asthma, or hay fever, and the infant frequently has had a tendency toward "cradle cap" since birth. The eruption often begins on the cheeks. Usually in mild cases it does not spread, but there may be patches in the antecubital fossæ and popliteal spaces and it may spread to other parts of the body, notably the outer aspects of the legs, wrists, forearms, and forehead. The primary and most characteristic lesion is the exudative papule with varying amounts of oozing; confluence of lesions produces exudative patches. However, the lesion may be a flattened, scaly patch with little or no oozing. Severe pruritus is invariably a part of this picture. The eruption may become a generalized erythroderma and present a most difficult problem.

2. The childhood phase of atopic-neurodermitic eczema occurs between the ages of 2 and 12 years. At 2 years of age, most infants have recovered from their eruptions and are able to contact with impunity any of the allergens to which they were sensitive. In other words, they have outgrown their former sensitivity. It is not uncommon to have the eczema develop after 2 years of age, although usually it has existed at some time during infancy. The appearance of the childhood eruption is very different from that of infancy. It so nearly resembles the adult type that it will be described therein.

3. The adult phase of atopic-neurodermitic eczema, in the majority of cases, is either a direct, uninterrupted transition from the childhood phase—or appears as a new attack after years of freedom. Statistics are not available to show how many of the infants with atopic dermatitis manifest the condition in adult life.

The most prominent symptom is itching, which may be continuous or occur in crises. Scratching of the lesions produces most of the changes in the skin. The location and distribution is characteristic, often diagnostic, the most notable features being the bilateral symmetry and the involvement of the flexures—the antecubital and popliteal spaces—and the front and sides of the neck. Other favorite sites are the dorsa of the wrists, paronychial areas of the fingers, dorsa

of the feet, eyelids, forehead, and scalp. However, it may involve any part of the body.

The primary lesion is the papule. The papules coalesce to form lichenified areas of various sizes which are usually surrounded by outlying scattered papules that are frequently excoriated. The affected skin is usually dry, thickened, erythematous, or hyperpigmented. However, due to irritation or infection, there may be weeping, exudation, and crusting.

Summary.—The term, atopic-neurodermitic eczema, is used to describe this dermatosis because of conflicting opinion as to etiology. The term, atopic eczema, is preferred in the infantile phase and in many cases of the childhood phase because frequently a food or environmental allergen is proved guilty. As the individual grows older, the nervous and emotional factors become significant, and the term, neurodermitic eczema, is more appropriate. This latter statement holds true, in spite of the strong and varied sensitivity to skin tests, as the patients fail to improve in most instances when removed from contact with the positive allergens. Also, there is inability to produce the eruption in a neurodermitic patient when he is brought in contact with the causative allergens.

CIRCUMSCRIBED NEURODERMITIC ECZEMA

Synonyms.—Lichen simplex chronicus, neurodermite, circumscribed pruritus with lichenification.

This form of eczema is closely related to atopic-neurodermitic eczema but has enough distinct characteristics to warrant separate classification. The outstanding features are its clinical appearance of lichenification and the tendency to remain circumscribed; also, it seems to be related less closely to allergy and more to nervous-emotional influences.

Fig. 4. Circumscribed neurodermitic eczema.

Mechanism of Reaction.—The basic cause is unknown, but there are factors found in these cases which seem to play a part in the development of the eruption. Many patients show nervous instability and exhaustion and frequently the eruption develops following some strenuous physical or mental activity. The majority of cases are found in women. The eruption often appears in winter and disappears in summer. Foci of infection, while not often of significance, may be a factor. Severe pruritus frequently precedes the development of the objective symptoms. Scratching causes trauma and leads to histological changes in the skin.

Diagnosis.—The eruption consists of fairly sharply defined patches which are oval, irregular, or angular, and of variable size. In the beginning the skin assumes a dusky pink tint, later to become grayish, brownish, or yellowish in color. The primary lesion is the papule and, through confluence of these, a thickened lichenified plaque is formed. Due to this thickening the normal skin markings are accentuated, dividing the area into numberless squares or quadrangular elevations. In the zone around the periphery of the lesion may be found discrete brownish papules.

The most common locations are the nape and anterolateral areas of the neck, the scalp, the inner surface of the upper thigh, and the extensor surface of the leg below the knee, the dorsum of the foot, the ankle area, and the extensor surface of the arm below the elbow. The eruption not uncommonly is symmetrical.

INFECTIOUS ECZEMATOID DERMATITIS

Synonyms.—Impetiginous eczema, barcoo rot, superficial staphylococcic dermatitis, pustular eczema.

This form of eczema was first described by Engman[12] who listed several diagnostic characteristics to make the condition more easily recognized. Since that time, it has been designated a clinical entity with definite causative factors and a definite clinical picture.

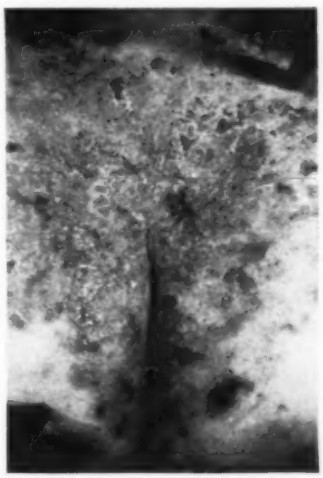


Fig. 5. Infectious eczematoid dermatitis.

Mechanism of Reaction.—Infectious eczematoid dermatitis is the result of infection with staphylococci plus the development of hypersensitiveness of the skin to the organism or its products. The eruption usually develops secondary to, and in the immediate vicinity of, a focus of infection—usually one that is draining. The preceding disorder may be furuncles, scabies, otitis media, infected discharge from nose, paronychia, bed sores, infected wounds, and even minor cutaneous injuries. In fact, Foerster[13] states that infectious eczematoid dermatitis is the most common major dermatologic condition occurring in association with occupational injuries and may occur as a direct complication of trauma or as the result of improper medical or nursing management of injuries. It is frequently responsible for the prolongation of such disabilities.

Diagnosis.—This eruption is characterized by erythematous, vesicular, pustular, scaly, or weeping crusted patches with no tendency toward central involution. It spreads by peripheral extension and by the

formation of new patches by autoinoculation. Exposed parts are not most frequently affected. The history reveals an associated infection, trauma, or suppurative condition. The earliest lesion may be a vesicle which soon breaks to form a scaly patch which is circumscribed with sharply defined borders. The epidermis at the periphery of these patches is usually undermined, split up, or raised by collections of seropurulent fluid which may form a thin ridge-like crust about the periphery. New foci may begin as a group of vesicles about, or at some distance from, the old lesions. These vesicles are larger and farther apart than those in allergic-contact eczema. There is no true symmetry in distribution. Lymph glands in the involved region are frequently enlarged. The subjective symptoms vary from mild to severe but usually are less severe than in other forms of eczema.

ECZEMATOUS DRUG ERUPTION

Synonyms.—Dermatitis medicamentosa, eczema medicamentosa.

Drugs, ingested, injected, or absorbed through the mucosa or skin, can produce involvement of the integument which may simulate almost any of the dermatoses. Therefore, the physician should regard as a possible drug eruption any skin disease of unknown etiology, regardless of its appearance, course, or history. Many of the drug eruptions are easily recognized, due to unique characteristics, but often careful investigation is necessary in order to identify a medicinal agent as the causative factor. The reaction causing the eruption originates from within, distinguishing it from the allergic-contact type of eczema.

Mechanism of Reaction.—However the offending drug makes its entrance, it is carried by the vascular or lymph systems until it contacts the tissue where the reaction takes place. The shock tissues in drug eruptions are the dermis, epidermis, and follicles. This reaction, in the majority of instances, is the result of allergy (specific acquired sensitivity), but the possibilities of intoxication, predisposition, and cumulative effects must be kept in mind.

Drug eruptions in general are usually due to specific acquired hypersensitivity.[14] For instance, very minute amounts of a drug which has been well tolerated for varied lengths of time may suddenly produce severe skin eruptions. The cutaneous response, as a rule, is entirely different from that produced by toxic action of the drug, and the amount required to produce the eruption is much smaller. Many drug eruptions occur only in predisposed individuals and, regardless of the deliberate increase in dosage, can never be made to appear in most patients. Cumulative effects can be ruled out by recurrence of lesions upon re-exposure to small amounts of the drug after previously administered amounts have been eliminated.

Diagnosis.—A history of ingestion of drugs and the nature of the eruption often make diagnosis very easy. However, it may be coincidental that a patient has an eruption and is receiving a drug at the same time. It is frequently difficult to elicit a history of drug taking. Specific questions must be asked concerning products such as blood tonics, sleeping potions, laxatives, nerve medicines, etc., because many patients may not consider these as drugs.

Usually, drug eruptions have a sudden onset, more or less generalized, roughly symmetrical distribution, and brilliant coloration. One of the exceptions to a widespread distribution is the "fixed eruption" which is due to a localized allergy. The reaction remains in a limited area and may either be of long duration or, as is more usually the case, of short duration. Reaction occurs repeatedly upon exposure to the excitant.

The clinical appearance of the lesions is quite varied. The eczematous reaction is only one of several different types which include erythema, urticaria, angioneurotic edema, and lesions of a purpuric, vegetative, keratotic, or pigmented nature. The subjective symptoms are burning and pruritus, which may or may not be present.

The number of drugs capable of producing reactions is enormous, but the chief offenders causing the eczematous type of reaction are arsenic, bromides, iodides, quinine, salicylates, phenolphthalein, procaine and other local anesthetics, barbiturates, sulfonamides, etc. Skin tests as a diagnostic aid are disappointing and of little value.

Most drug eruptions clear up fairly rapidly, usually within a few days or weeks after the drug has been discontinued. Occasionally, however, an eruption will persist and continue to present new lesions, and sometimes terminate in death, in spite of treatment and all efforts to eliminate the offending substance.

MYCOTIC ECZEMA

Synonym.—Eczematoid ringworm.

Skin diseases due to fungi are among the most common of the dermatoses. These organisms are widely disseminated and are encountered in all walks of life. The infection produces a varied clinical picture which frequently will assume the eczematous characteristics. There is a great tendency to call any intertriginous involvement—such as those between toes and in groin—a fungus infection without proper laboratory corroboration. This tendency is to be strongly condemned, for frequently after such a diagnosis, potent fungicidal medications are applied provoking a superimposed contact dermatitis with disastrous results.

Mechanism of Reaction.—The response of the skin and the extent of reaction depends upon several factors. The majority of adults repeatedly contact pathogenic fungi, but actual clinical evidence develops only in those individuals who contact massive amounts or unusually virulent fungi, or in those with impaired tissue resistance. Trauma, heat, and moisture break down normal immunity. A high carbohydrate diet or diabetes alters the composition of sweat and forms a more favorable medium for the development of fungi on the skin. Abnormal collections of macerated tissue, such as that formed between the toes, play an important causative role because the common pathogenic fungi are keratinotropic. They live and multiply only in dead, devitalized tissue—hair, nails, etc.—and in the horny layers of the skin.

The localized and generalized development of hypersensitivity and allergy are most important factors in the production of clinical manifestations. The tissues become specifically altered in their ability to react to the fungi or their products and this alteration is permanent. This phenomenon forms the basis for the trichophytin and oidiomycin tests in which a commercially prepared extract from the fungi is injected intradermally. A positive reaction, which is indicated by erythema or papulovesicular lesions, means a hypersensitization to the fungus or its products and the presence of, or previous existence of, a mycotic infection.

Dermatophytids, analogous to the tuberculids and other so-called "id" eruptions, are also the result of sensitization to fungi or its products. This condition is produced by absorption of allergenic substances which are carried by the blood and lymph streams from a focus of mycotic infection to a distant area of hypersensitive skin, producing skin manifestations.

Diagnosis.—Many forms of mycosis may be recognized from clinical observation, but confirmation by laboratory procedure is essential. This is done by direct microscopic examination and culture. Material is collected by scraping, in case of a dry and scaly eruption, or, if vesicles are present, by clipping the roof of one and placing the specimen on a glass slide; a few drops of 20 per cent potassium hydroxide are then added and a cover slip put in place. Gentle heating by a flame to macerate the tissue will permit microscopic examination for hyphæ or spores of the fungus. If a culture of the organism is desired, the material may be placed on Sabouraud's medium for growth. The different types of fungi may be determined by the different characteristics of their growth.

Clinical types of mycotic infection are many, but the eczematous reaction is very common and may be indistinguishable from other forms of eczema. It may range from the acute erythematovesicular exudative reaction to the subacute, less inflammatory and less exudative, down to the chronic dry, scaling, and thickening type.

STASIC VARICOSE ECZEMA

Synonym.—Stasis dermatitis.

Under this heading is described a dermatosis in which circulatory stasis plays the leading role. Whether the chronic passive congestion is the result of old age, varicosities, or thrombophlebitis, the difficult and distressing problem of eczema may be present. The lower legs, of course, are the site of predilection. The lowering of epidermal resistance produced by stasis and eczema is followed by invasion of bacteria or fungus.

Fig. 6. Stasic varicose eczema with ulcer.

Mechanism of Reaction.—The epidermal cell loses its power of normal reactivity as a state of impaired nutrition exists, caused by impoverished circulation. This loss of surface resistance appears to be a direct result of edema of the tissues, and various eczematous changes may result. However, Zimmerman[15] believes that cutaneous lesions are of an inflammatory origin, arising by extension from the phlebitis of varicose veins. The stasis and anoxemia within the vessels set up an inflammation in the intima, with resulting phlebitis. From the vessels, the inflammation extends to the adjacent tissues and skin until an area of subacute cellulitis appears and then eczematization occurs.

Diagnosis.—Phlebitis, varicosities, or some impairment of circulation is usually found in association with skin lesions. The beginning eruption may be a simple erythema which gradually spreads, becoming infiltrated, indurated, and pigmented. The process may stay dry and scaly, but it easily becomes moist and crusted. The breakdown of tissue may be complete with the formation of an open ulcer, cicatrization, atrophy, and adhesion of the integument to deeper structures. The subjective symptoms are itching, burning, and pain.

The future of the process depends upon several factors, among which are the invasion of the involved area either by bacteria or fungi, the use of irritating, local applications, and transepidermal absorption of toxic material from destruction of patient's own cellular tissue. All may cause an extension, and even a generalization, of the eruption.

INFANTILE ECZEMA

The title of this division of the eczema group merely signifies eczema in the infant and is made up of a number of dermatoses. Therefore, it is necessary to indicate exactly what is meant by "infantile eczema." Out of the more recent attempts to segregate this group emerges a classification regarding which there is essential agreement between dermatologists[16] and pediatricians.[17] It consists of: (1) atopic eczema, (2) allergic-contact eczema, (3) seborrheic eczema, and (4) mycotic eczema.

These are the same eruptions as are found in the adult, where they are usually clear cut and distinguished from one another by their clinical appearance. The opposite is true in the infant. Combinations and transitional forms, with the frequent additions of pyogenic infection, may make differential diagnosis impossible.

Mechanism of Reaction.—This is the same in infants as in adults, but the morphological and clinical characteristics are different, because the infant is not merely a small adult, but is a different individual entirely. He reacts differently, not only in many dermatoses, but in many other diseases, since his metabolism, chemistry, anatomy, and physiology are dissimilar to those of the adult. For example, the vesiculation and weeping, which is typical of adult allergic-contact eczema and absent in other uncomplicated adult eczemas, are very likely to be present in all forms of infantile eczema. Probably this occurs because of differences in the skin which permit exudate from below to permeate upward much more readily in the infant.

Diagnosis.—The location and distribution of the disease in the infant is not nearly so often in the expected place nor is it so often typical. The scalp and face are the sites of predilection in both atopic and seborrheic eczema. The scalp condition, commonly called "cradle cap," is a greasy scaling and is generally considered a form of seborrheic eczema and usually responds quickly to ordinary treatment for that condition. However, what appears, from a clinical standpoint, to be seborrheic eczema may fail to respond to such medication and turn out to be the forerunner of a widespread atopic eczema.

Fortunately, from a diagnostic standpoint, the atopic form so predominates in the field of infantile eczema that only a small per cent of cases represent the other forms. The mixed forms and cases which are complicated by impetigo or invaded by fungi are, however, numerous enough that the eruptions often present a picture of oozing, crusting, excoriation, and infection so atypical that accurate diagnosis is impossible.

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Cryotherapy for Angiomas in Infancy

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Carbon dioxide snow therapy, for the treatment of angiomas in infancy, gives excellent results. This therapy was described in 1907 by Pusey,[1] but was never widely accepted because of the inconvenience of making the snow, as well as the fact that other therapies were introduced at about the same time. Pusey's paper not only dealt with the treatment of angiomas, but of other skin lesions as well. It was not until 1935 that a simple device for forming snow was introduced by Bloom.[2] In 1942 Carpenter[3] reported his success in the use of the apparatus now made by the Kidde Manufacturing Company.

The simple type of angioma is described as a slightly raised strawberry red tumor of varying size, composed of small vessels bound together by connective tissue. It must be distinguished from the cavernous type, which involves the larger vessels, is deeper, and erectile. Both have responded well to carbon dioxide snow therapy. The lesions that I have treated so far have been found on the scalp, face, and thorax.

An infant, 3 months of age, presented a typical lesion involving the scalp. A single simple angioma, originally 2 cm. in diameter, was first treated with carbon dioxide snow using 5 seconds exposure and light pressure. The immediate result was a blanching and flattening of the entire lesion so that it disappeared entirely for about 10 seconds. Then, as the freezing effect left, the lesion slowly appeared again as before the treatment. The following day it was somewhat larger and erythematous. This condition persisted for 4 days, when a scaliness appeared. This reaction was the same as in any first degree burn. The scale peeled away and in 10 days the lesion was somewhat blanched and, although of the same diameter, was less elevated.

Treatment was repeated in 2 weeks, using 30 seconds exposure with moderate pressure; the same immediate result was noted as after the first treatment. However, the following day a slight blister, which soon ruptured, appeared on the lesion. This meant a little too much exposure. (It is best to keep the dose less than the blister reaction—only to an erythema.) The same reaction as before then took place.

Upon observation 4 weeks later, the lesion was 1½ cm. in diameter, of a very pale pink color, rather than strawberry, and much less elevated. The treatment at this time consisted of 20 seconds exposure with moderate pressure, with a good immediate and post-therapeutic reaction. At examination 1 month later, no evidence of the lesion was found. Upon palpation one could discern a slightly raised area of soft consistency on the scalp.

No treatment was given until another month had passed, making 2 months between the third and fourth applications. At this examination, the lesion appeared as it had 1 month previously. A fourth treatment was given, consisting of a 20 second exposure with heavy pressure. The reaction was an erythema as before. When the patient was last seen, there was no evidence of the lesion.

Other patients treated in a like manner have responded as well or even better than the infant whose treatment has been described. In many instances, lesions on the thorax responded in one treatment with 10 to 20 seconds exposure and moderate pressure. Scalp lesions responded in three treatments. The difference seems to be in the tissues treated, the scalp being thicker than the general body epithelium.

Some very large cavernous hemangiomas will respond better to x-ray therapy than to carbon dioxide snow. X-ray takes more time and is much more expensive. The use of carbon dioxide snow in the treatment of lesions of over 2 inches in diameter is difficult because many applications are necessary in order to cover the area. X-ray therapy directed to these lesions can cover them all at once, but many treatments may be necessary. Large cavernous lesions are frequently seen on the face and should be removed as early as possible.

Some authorities state that the angiomas of infancy may well be left alone because they will subside by themselves. This is not true. Occasionally simple

(Continued on page 600)

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END RESULTS OF OPERATIONS ON THE INTERVERTEBRAL DISK

Emphasis on structural integrity in the osteopathic philosophy has made physicians and surgeons of this school of practice particularly conscious of the possibilities involved in any pathology of the intervertebral disk. They have watched with keen interest developments in this field because the intervertebral disk must be considered in the manipulative phase of their practice.

From time to time THE JOURNAL has attempted to bring to the profession the current thought and practice concerning the diagnosis and treatment of the ruptured and protruded intervertebral disk. During the past 10 years it has recorded the swing of the therapeutic pendulum from rest, traction, diathermy, artificial supports, etc., to radical surgery for removal of the disk and then back again. It has also followed the trends in diagnostic technics from lipiodol to air to pantopaque, to diagnosis by neurological signs only, and back again to contrast media. It has given the opinions of the neurosurgeons and orthopedists as to the various types of operations designed to remove the pathological disk and stabilize the vertebrae involved.

A review of the current literature reported editorially in THE JOURNAL reveals an amazing amount of confusion as to accurate diagnostic criteria upon which to base a decision as to the presence or absence of a protruding intervertebral disk, the surgical removal of which may result in relief from low-back symptoms and sciatica.

As always the true test of any therapeutic procedure is based on end results and sufficient time must elapse before such results can be evaluated. Aitken and Bradford* recently reviewed the end results of operation for rupture of the intervertebral disk in 170 compensation cases extending over the period from 1940 to 1944. They report that "Only 13 per cent [of the patients] are symptom-free and capable of performing heavy laborious work. Seventeen per cent have some persistent symptoms but are capable of doing all but the heaviest type of work. Twenty-five per cent have pain and are able to perform only light work. Classed as bad results, 42 per cent continue to have pain and have never returned to any type of work. There was a 3 per cent mortality."

The reviewers admit that the average compensation case is not the best possible material for a favorable end result because of the individual's desire for financial reimbursement for injuries received. However, it is pointed out that the period from 1940 to 1944 was one of intense industrial activity brought on by the war and most patients wanted to work because of the high wages that were obtainable.

In reviewing the diagnostic findings in these cases, the investigators reported that myelography was performed in 102 but was less than 50 per cent accurate as revealed at time of operation. The opaque media showed a higher degree of accuracy than air, but the number of false defects was extremely high.

In this entire series there were 67 patients in whom no pathological disk was found at operation. Aitken and Bradford remark that "This represents 40 per cent of the total and is an adequate indication of the inaccuracy of our diagnostic criteria." However, the results of operation when no pathological disk was found were poor as compared with those with true disk disorders.

Another surprising diagnostic revelation was the high incidence of reflex changes, referred pain down the leg on coughing and sneezing, atrophy, and sensory changes, which were observed in almost 50 per cent of the patients in whom no pathological disk was found at operation.

In 41 cases persistence of symptoms led to reoperation. In all instances reoperation was in the form of re-exploration, fusion, or refusion.

Taken as a whole the results of fusion were reported as not particularly encouraging. "Of the thirty-nine primary fusions performed, nineteen patients, or only 50 per cent, were able to return to some form of work."

This analysis, made from case reports taken from the files of a large national compensation carrier, gives a fairly accurate picture of the intervertebral disk problem as it is handled throughout the country by neurosurgeons and orthopedists, many of whom enjoy national reputations.

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*Aitken, A. P., and Bradford, C. H.: End results of ruptured intervertebral discs in industry. Am. J. Surg. 73:365-380, Mar. 1947.

DR. OSCAR JOHN SNYDER—AN APPRECIATION

Dr. Oscar John Snyder, beloved physician, founder of the Philadelphia College of Osteopathy, is dead. He died in the home he loved so much in Narberth, Pa., June 10, 1947, at 7:30 p.m. His body was laid to rest after fitting ceremonies in West Laurel Hill Cemetery, Philadelphia, June 14, 1947.

The body of Oscar John Snyder has been laid to rest, but his spirit will remain alive for time to come. To those of us who were privileged to know him in life, he will ever be closer to us than before. The library dedicated to his memory, the bust which stands in the college auditorium, the painting on the wall, are eloquent reminders but none can compare with the spirit of the man burned into our very souls.

Oscar John Snyder was born November 17, 1866, in St. Louis. He attended the State Normal School, Winona, Minn., from 1884 to 1890. In 1894 a Bachelor of Science degree was conferred upon him by Columbian (now George Washington) University and subsequently the degree Master of Science in 1896 by the same institution. Dr. Snyder graduated from the Northern Institute of Osteopathy in 1899.

While at the Northern Institute of Osteopathy, the idea of a college of osteopathy in Philadelphia was born in the mind of our founder. The idea grew and was translated into tangible fact as soon as Dr. Snyder came to Philadelphia. He remained President of his new school from 1899 to 1907, and a trustee of the college until his death.

Dr. Snyder founded the Pennsylvania Osteopathic Association and was president, 1900 to 1909. He was the first chairman of the New Pennsylvania State Board of Osteopathic Examiners, 1909 to 1930. He was president of the Associated Colleges of Osteopathy in 1905; president of Osteopathic Clinical Research, 1910 to 1915; president of the American Osteopathic Association, 1916-17. The Distinguished Service Certificate of the American Osteopathic Association was awarded to him in 1929. At his death Dr. Snyder was a member of the American Osteopathic Association, the Pennsylvania Osteopathic Association, Iota Tau Sigma, and Phi Sigma Gamma.

On June 22, 1904, Oscar John Snyder and Aline Cantwell were married. Throughout the more than 43 years to his death this marriage was at once an example and inspiration to all who knew them. One needed to be in their presence only minutes either publicly or privately to observe that Oscar John Snyder had only two objects of devotion—osteopathy and his family. What finer example can a man set than his in this troubled world. Three children were born, Joseph Cantwell, Honora, and James Ayers, both sons having become doctors.

Great statesmen have developed in America throughout its short history, yet few will be as vividly remembered in the legislative halls of the Commonwealth of Pennsylvania as Oscar John Snyder. His dynamic personality, his tenacity and sincerity of purpose knew no defeat. Many a noted public figure felt the whip of his tongue; he feared no man.

To those of us who are left behind "O. J." Snyder will be remembered as a figure without comparison. He typified all the properties for which the word virtue was developed. He was in the forefront of battle. His word was his bond. He was courageous but not rash. He was generous but not extravagant. His very carriage and figure marked him as a man carrying the obligations of a great destiny—a leader, a founder.

Otterbein Dressler, D.O., M.Sc.
Dean, Philadelphia College of Osteopathy.

IMPORTANT CHANGE IN HOSPITAL CONSTRUCTION ACT REGULATIONS

The sovereignty of the States in intrastate health matters not only is threatened constantly by private pressure groups, but also is whittled away continually by encroachments of Federal grants-in-aid to the States.

Orchids to the Federal Security Administrator, the Surgeon General of the Public Health Service, and the Federal Hospital Council for the recent revision of the Federal regulations relating to hospital construction grants under the Hospital Survey and Construction Act.* The original regulations, Section 10.1 (b), promulgated February 11, 1947, required the States to delegate to a private corporation the standard-making authority for certain hospitals. The revision promulgated June 10, 1947, expunged the private corporation.

Section 10.1 (b), as revised, showing the deletions in brackets and the new words in italics, reads as follows:

Sec. 10.1.—(b) Base area. Any area which is so designated by the State Agency and has the following characteristics: (1) Irrespective of the population of the area, it shall contain a teaching hospital of a medical school; [whose undergraduate medical program is approved by the American Medical Association's Council on Medical Education and Hospitals.] this hospital [shall] *must* be suitable for use as a base hospital in a coordinated hospital system within the State; or (2) The area [shall contain] *has* a total population of at least 100,000 and *contains or will contain on completion of the hospital construction program under the state plan* at least one general hospital which has a complement of 200 or more beds for general use. This hospital [shall be registered with the American Medical Association and approved by the American College of Surgeons.] *must furnish internships and* [Approved] residencies in two or more specialties *and must* [as defined by the American Medical Association, and approved internships shall be provided by this hospital. The hospital shall] be suitable for use as a base hospital in a coordinated hospital system within the State.

State legislatures in prescribing minimum standards of maintenance and operation for hospitals receiving aid under the Hospital Survey and Construction Act will undoubtedly give consideration to criteria established by private groups. A searching analysis of the motivation of such monopolistic practices as the closed staff and reservation of public hospitals for patients of practitioners of a single school of medicine, should enable the legislators to steer a true course and avoid delegation to any private group of the right to dictate the terms under which the people of the State may use their own hospitals.

C. D. Swope, D.O.

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*For Hospital Survey and Construction Act regulations see March, April, and May issues of The Journal. For amendments, see page 594 of this issue.

SPECIAL ARTICLE

Fidelity*

NELSON GRILLS, J.D.,L.L.M.
General Counsel, A.O.A., Chicago

All of you probably recall with some tenderness and a trace of humor your first trip away from home alone. Remember how your mother hovered about, anxiously counting socks, and worried about whether or not you were taking the necessary number of shirts. Remember how your father, either by saying, or without saying, left you with the impression that you were expected to be outstanding in the crowd, someone distinctively different from the "mine run" of people. In many respects, your activities of the last few weeks are similar to that first trip away from home alone. The Chicago College, in a very real sense, is your professional home. It has taken you, equipped with only an academic understanding of the basic sciences and an overpowering ambition to become an osteopathic physician, and it has nurtured you carefully for 4 years. Now, with confidence in your ability to achieve success as an osteopathic physician and with regrets at the necessity of a separation, it signalizes your departure by these exercises.

Now is the time to take stock of the things with which you have been equipped during the preparation for your duties as a physician. I am sure that your teachers who have tutored you patiently for the last 4 years are abundantly more capable of assisting you in inventorying your qualifications as a doctor than I am. However, as an osteopathic patient, and as a person who has associated himself intimately with the osteopathic profession for some time, I would like to take this opportunity to assure myself that you are taking with you and will not forget the most precious quality that your professional training has given you, the thing that sets you apart from all other physicians and denotes you as an osteopathic physician. To help us in our inventory, I have sought the assistance of Dr. Andrew Still,[1] the founder of osteopathy, who once said:

> My object is to make the osteopath a philosopher and place him on the rock of reason. Then I will not have the worry of writing details of how to treat any organ of the human body, because he is qualified to the degree of knowing what has produced variations of all kinds in form and motion. I want to establish in his mind the compass and searchlight by which to travel from the effect to the cause of all abnormality of the body.

Dr. Still[2] described succinctly the philosophy he desired physicians to possess when he said:

> To find health should be the object of the doctor. Anyone can find disease.

Dr. Still[3] also gave osteopathic physicians the key to making it distinctive, is called the "osteopathic concept," and everyday practice by pointing out:

> The Osteopath reasons if he reasons at all, that order and health are inseparable, and that when order in all parts is found, disease cannot prevail . . .

It would be "carrying coals to Newcastle" to describe to you the osteopathic concept of health. However, if I may be pardoned, I would like to explain the osteopathic concept to your friends and well-wishers here this evening. McCole,[4] an authority on osteopathy, describes its contribution to medical knowledge as follows:

> The addition which A. T. Still made to medical knowledge and which he incorporated in the new school of medicine, making it distinctive, is called the "osteopathic concept," and may be stated as follows:
>
> 1. "The body produces its own healing substances.
> 2. "Health depends on structural integrity.
> 3. "Perverted structure is a fundamental cause of disease."

Lest you feel that the successful practice of osteopathy is limited to persons possessed of the genius of Dr. Still, let us turn for a moment to the source of his principles. R. McFarlane Tilley,[5] in the A. T. Still memorial address at the last convention of the American Osteopathic Association, said:

> I have long suspected that the origins of some of the more simple manipulative methods and technics that Dr. Still incorporated into the practice of osteopathy are buried in the facts and traditions of antiquity. . . .
>
> But it was Still who first amplified, rationalized, developed and dignified these procedures, who first fitted them into a school of medicine, who thereby actually made an original contribution to the practice of the healing arts.

Not only are the simple methods and technic which Dr. Still incorporated into the practice of osteopathy inherited from the past, but even the important fundamental of "structural integrity" was first reported by the "father of modern medicine," Hippocrates,[6] who said:

> According to my concept of the body, there is no beginning, everything is beginning and everything is end, as in a circle. This is true of disease and of the body as a whole.

Some of you may say, "If the contribution of osteopathy is the recognition of ancient fundamentals, aren't these theories the common property of all physicians?" That your training as osteopathic physicians sets you apart from other physicians, can be demonstrated by an examination of current medical journals and by the observation of physicians in their practice. One ophthalmologist[7] after his recent military service had this comment to make:

> Like Socrates, many young men have returned from military service with the realization that their previous thinking has been entirely too limited in scope. Many of these men were forced by the exigencies of military medicine to revert to general practice and to forget that they might be highly trained specialists in the morbidity of a single organ . . .
>
> Sometimes an ophthalmologist or perhaps a thoracic surgeon attached as a Naval medical officer to a Marine regiment would live in such close contact with his troops that, unless he were of the most rigid mental makeup, he could not help but see them as fellow human beings rather than as a group of potential casualties . . .
>
> *However, in spite of the experience of the war, consideration and medical treatment of the organism in terms of organs still plays a dominant role in the medicine of the present day, and this is outstandingly true of ophthalmology.*†

*Commencement address delivered at the graduation exercises of the Chicago College of Osteopathy, June 11, 1947.

†Editor's note: Italics ours.

Very often, one who knows the outstanding persons in his profession only through their writings regards these persons as philosophers entirely unassociated with the obligations of dealing with the practical aspects of practice. It is important to realize that Dr. Still, in addition to contributing the basis for the development of a new school of medicine, was himself an eminently successful physician who offered medical care to persons who had sought fruitlessly for relief for a long period of years. A. G. Hildreth,[8] in speaking of Dr. Still, says:

His practice grew so rapidly between 1885 and 1892 that it became unwieldy. It was a problem how best to take care of the people that were flocking to him. He did not find time enough to treat all adequately.

Realizing that the fundamentals of osteopathy were not new, one wonders what qualities Dr. Still possessed and which must be possessed by new osteopathic physicians if they are to be assured success in their careers. Any vital person cannot fail to be impressed with the almost fanatical zeal with which Dr. Still struggled against first, arrogant disregard, and then, active prejudice. However, the careful and thoughtful reader will be more impressed with the farsighted intelligence which led the courageous struggle of "The Old Doctor" for educational standards assuring the quality of medical training. Remember that Dr. Still was speaking in an era of crass commercialism, even in his own profession, and long before the Flexner[9, 10] reports which gave impetus to improvements in medical education and long, long before the current program to "speed up" medical education when he said:

We expect to educate our students to a complete preparation, and to use all the time necessary in that preparation in surgery, obstetrics, and general practice. We will give to the qualified student his diploma, not at the end of two or four years, but when he has proven his knowledge of anatomy, physiology, chemistry, surgery, obstetrics, and of all the principles taught in the American School of Osteopathy . . . It is quality, not quantity that we want.[11]

If students of human nature could ever agree, I presume they would select the qualities of intelligence, industry, and courage as required characteristics of an osteopathic physician.

The intelligent person must possess a vast capacity for maintaining in the storehouse of his memory experience gained from day to day. Our schools are devoted to giving students in a short period of time great amounts of synthetic experience. However, the experience gained in our schools is of little usefulness unless it can be applied in our lives or practice at the conclusion of our training. The application of experience to the answering of our problems requires imagination to see beyond the obvious, and a dogged persistence to continue our search until some relationship is discovered between the various elements of a problem. Finally, one must have sufficient confidence to depart from established practices when one's training and imagination indicate the need for departure. All of these factors contribute to the meaning of intelligence. A person may become a physician without having these qualities, but he cannot practice as an osteopathic physician.

Dr. Still[12] said:

Osteopathy is not so much a question of books, as it is of intelligence.

Haggard[13] in discussing error in medicine said:

The most persistent error in the field of medicine is complacency—the tendency to accept the prevailing belief as final. This error leads to the subordination of fact to theory; all new findings are interpreted only in the light of the prevailing philosophy; the old is clung to with passionate persistence.

While I hesitate to dispute with so eminent an authority as Dr. Haggard concerning error in medicine, I believe it is necessary to attribute error in medicine to something more deep-seated than complacency. The complacency which disturbs Dr. Haggard, I believe, is probably the result of a lack of one of the basic elements of intelligence on the part of many doctors. This element I choose to call imagination. Many people are born with a lack of imagination and other persons through their education have their imagination stunted, or entirely destroyed. If you are familiar with the antics, or happen to be the father of a little boy, you realize all too well the annoyance of the continual, "Why, Daddy?" Despite the irritation of this continual questioning by a small child, the imagination which raises these questions is the most valuable tool with which a child is endowed for finding the answers to his problems. A reluctance on the part of learned men to admit that "they don't know" and the formalization of education in our schools has resulted in discouraging students from asking unanswerable questions and in attributing some inherent authority to the answers which makes additional queries heresy to be sternly suppressed. Our professional schools are particularly guilty of engaging in the wholesale destruction of the imagination of their students.

Dr. Still[14] emphasized very strongly his point that one cannot rely on memory alone, but must use what I have called imagination, when he said:

What I want to say to the student is about this: I think that at the very time a young doctor needs knowledge on the cause of diseases he is pushed into the idea that he must look over the recipe papers till he finds "Good for Croup" on a prescription sheet. Then a copy is sent in haste to the drug store to be filled.

In addition to possessing intelligence, the osteopathic physician must be a person of unusual industry. Osteopathic physicians and, to some extent their patients, realize the great amount of effort that must be expended in treating patients osteopathically. Because the osteopathic physician is not by his training predisposed to use the "easy methods" of drug therapy, and because an understanding of the osteopathic concept opens for the use of the osteopathic physician the benefits of physical therapy which have been overlooked by the medical profession for many years, a greater portion of the osteopathic physician's time and energy must be devoted to the personal care of his patients. Piersol,[15] an outstanding internist and medical editor, comments as follows on the attitude of most physicians toward physical therapy.

Physicians, as a rule, because of their lack of understanding, evince little interest in acquiring a sound working knowledge of physical therapy. Furthermore, *the proper application of physical therapeutic methods requires not only time but a certain amount of manual dexterity. Since physicians have been loath to give of the former or to acquire the latter,*‡ the field of physical therapy has been neglected by the medical profession.

‡Editor's note: Italics ours.

In addition to the time and energy which must be expended by an osteopathic physician, the diligent manner in which he must seek beyond the "exciting" causes to discover the "inviting" causes of disease, requires him to couple with his industry an indefatigable determination to remove the predisposing factors which interfere with the health of his patients. E. T. Abbott,[16] professor of surgery at one of the osteopathic colleges, has this to say of the "osteopathic viewpoint":

> In solving the therapeutic problems of a sick individual, the osteopathic physician in his examination of the patient before him, attempts to discover what is wrong with that particular body that caused it to fail in its adaptation and become ill and thus approaches his clinical problem from what we choose to term the "osteopathic viewpoint." This causative factor in the production of disease we will term "intrinsic" influence, or the "inviting" cause. The physician then turns his attention to the "extrinsic" thing which caused this particular disease . . .
>
> Physicians of other than the osteopathic school first turn their attention to the exciting cause. The osteopathic physician thinks first of the inviting cause. It is altogether fit and proper that both causes should be considered, but in their proper sequence.

Anyone who has attempted to search beyond obvious answers to a problem to find its underlying implications realizes immediately that only the most industrious person would attempt to carry this practice into his profession. However, by becoming an osteopathic physician you have assumed the burden of seeking beyond the "exciting" causes of disease.

Perhaps John Dewey,[17] better than any other person has summed up the distinction between what is demanded of the osteopathic physician, and the ordinary physician or "medical mechanic."

> Just in the degree in which a physician is an artist in his work, he uses his science, no matter how extensive and accurate, to furnish him with the tools of inquiry into the individual case, and with methods of forecasting a method of dealing with it. Just in the degree in which, no matter how great his learning, he subordinates the individual case to some classification of diseases and some generic rule of treatment, he sinks to the level of the routine mechanic. His intelligence and his action become rigid, dogmatic, instead of free and flexible.

A final necessary element of your character, that you must carry with you into the practice, is the courage to remain true to your chosen profession. This fidelity on the part of other osteopathic physicians has assured the world the benefit of osteopathic care, and through critical competitiveness has improved the caliber of all medical care. Incidentally, it has resulted in the personal success of osteopathic physicians in their practice.

You have chosen your profession wisely, and you are now entering the practice trained, skilled, ready and anxious to serve the ill and suffering in the various communities in which you settle. The great advances of medical science have made the facilities of hospitals and laboratories necessary for adequate health care. The maintenance of hospitals and other medical facilities has proved an expense too great for the individual doctor and patient to bear. Society, either through gifts or by taxation, is now supporting the majority of hospitals and other medical facilities. You will find in many communities that the patients of osteopathic physicians are denied the use of these facilities which they are required to support. While this discrimination results in an inconvenience to the doctor, it has the disastrous result of denying adequate medical care to osteopathic patients, or compelling these patients to accept the services of a physician in whom they have no confidence. The answer to this problem will be found in the near future, but seeking its solution will require great courage on your part. Your anxiety for your patients, and your desire to furnish medical care in accordance with your training may tempt you to sacrifice your position as an osteopathic physician. Recently an allopathic physician[18] expressed in a medical publication the following contention:

> The osteopaths have stolen a march on us; they have won the first phase of their battle for recognition. If we do not use means other than those we have thus far employed, forced equal recognition is inevitable. If, on the other hand, we obtain harmony between the two groups to the benefit of the public, medicine will ultimately profit: schools of osteopathy will vanish as others have in the past. Few will choose to become D.O.'s when they can have an M.D. degree for the same effort.

Thomas Paine[19] said:

> But it is necessary to the happiness of man, that he be mentally faithful to himself. Infidelity does not consist in believing, or in disbelieving; it consists in professing to believe what he does not believe.

To sacrifice the identity of the osteopathic profession will inevitably mean loss to society of medical care in accordance with the principles of the osteopathic concept. Overlooking the effect of this loss on you personally, the obligations to society you assumed upon entering training to become an osteopathic physician must restrain you from participating in such infidelity. If I may again quote from Thomas Paine,[20] I should like to repeat his words to the weak and wavering in another great struggle to protect fundamental principles; Paine being concerned with the Principles of Freedom:

> These are the times that try men's souls. The summer soldier and the sunshine patriot will in this crisis, shrink from the service of his country; but he that stands it NOW, deserves the love and thanks of man and woman. Tyranny, like hell, is not easily conquered; yet we have this consolation with us, that the harder the conflict, the more glorious the triumph. What we obtain too cheap, we esteem too lightly; 'tis dearness only that gives everything its value. Heaven knows how to put a proper price upon its goods . . .

Even if the better and more competent medical men ultimately rediscover the importance of structural integrity, it is doubtful that the majority of the practitioners of medicine will ever practice in accordance with the principles of the osteopathic concept. There is every reason to believe that the more intelligent, more skillful, and more painstaking physicians when acquainted with its principles will practice in accordance with its tenets. The average practitioner of any of the arts, be it medicine, law, or engineering is reluctant to seek beyond "apparent" or "exciting" causes. The training you have received at Chicago College of Osteopathy plus your intelligence, industry, and courage will make you a part of the osteopathic profession which, if it remains faithful to the principles upon which it has been based, will ultimately include all good physicians. Those of you who fail to measure up will fall with other mediocre men into the "easy way" of the "old school of medicine."

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Case History

LOEFFLER'S SYNDROME WITH A HITHERTO UNREPORTED ALLERGEN

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The seemingly increasing frequency of the atypical pneumonias has stimulated interest in their classification and treatment. The March JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION has a comprehensive article on the subject by J. M. Zimmerman.

In 1936 Loeffler[1] described the syndrome that bears his name as ". . . changing, even transitory, pulmonary infiltrations, eosinophilia of blood and sputum, a relatively mild clinical course, usually afebrile, in contrast to the roentgenological appearance of the lungs." It is generally felt that the condition is a response in the lungs to various allergens. Endamoebae, trichinae, ascarids, the Bruceila, and tubercule bacilli have been reported as responsible.

A white 53 year old farmer first consulted a physician in March, 1946, for weakness and fatigue. He was told he had anemia and was given iron and liver injections with some benefit until the extraction of two teeth with apical infection. Following this he became worse and refractory to the treatment. In September he was hospitalized for diagnostic study and x-rays of the chest and the gastrointestinal tract. There were no pathological findings. A diagnosis of anemia, type unspecified, was given.

Beginning October 1, he ran a low fever for 12 days and then noticed a tightness of the chest, a slight nonproductive cough, and was heart conscious.

The writer was consulted October 15. Examination showed a 130 pound middle-aged man, not appearing acutely ill while sitting quietly, but breathless upon slight exertion. Temperature was 98 F.; blood pressure systolic 140, diastolic 80; pulse 110 to 115 with slight fibrillation. Interosseous retraction on inspiration was noted in the left lower chest. Percussion was dull to flat over that area. The other lung fields were clear. Moist rales were heard over the whole left lower lobe, but there were no expiratory asthmatic rales. The heart was not enlarged or displaced, but a grade B systolic murmur was heard and the heart seemed to be laboring.

The only suggestion of allergy in the patient's past history was some stuffiness from barn dust. He has not had asthma or allergic rhinitis.

Blood agglutination tests for typhoid and brucellosis were negative.

A tentative diagnosis of atypical pneumonia was given with the possibility of a malignancy in mind.

After 6 weeks of supportive treatment without improvement, consultation was asked. There was agreement on physical findings and treatment and the inadvisability of attempting to transport the patient the necessary 20 miles to a hospital for further laboratory and x-ray work.

In January 1947, another episode of fever occurred with a rapid extension of lung involvement to the whole left lung and right base. On January 20 sputum and blood examinations were made. The hemoglobin was 62 per cent (Sahli), the red cell count, 3,090,000, and the white cell count, 8,450. The differential count revealed polymorphonuclears, 46 per cent; lymphocytes, 39 per cent; monocytes, 7 per cent; and eosinophils, 7 per cent. There were no acid-fast bacilli in the sputum but many cocci, a few resembling pneumococci. The sputum smear cell count was eosinophils, 43 per cent. In the sputum culture, hemolytic Staphylococcus albus predominated.

Penicillin and sulfadiazine were given with prompt disappearance of fever and the pulse came down into the eighties for the first time. There was little apparent change in the lungs on physical examination, but from this time on the patient slowly improved clinically.

Sputum culture February 25, 1947, showed nonhemolytic Staphylococcus albus and nonhemolytic streptococci. The smear showed polymorphonuclears, 59 per cent, and eosinophils, 41 per cent. X-ray examination was not obtainable until May 22, 1947, by which time the patient was able to walk a block or two without breathlessness or increasing the pulse rate uncomfortably. The x-ray report read:

"There is a marked increase of markings throughout the entire left lung. They remain linear throughout. There is no soft mottling. The axillary pleura is thickened. This thickened pleura obliterates the costophrenic sinus. The heart is entirely in the left chest. The intercostal spaces are slightly narrowed. The right costophrenic sinus is obliterated. The markings in the right upper lobe are increased. Their appearance is not that of tuberculosis, but of some chronic fibrosing process involving mainly the left lung field."

A curious clinical feature has been the almost complete absence of cough. At no time has it been troublesome and sputum specimens were obtained with difficulty.

From March to October of 1946 the history suggests that there was a hemolytic anemia, probably caused by infection with staphylococci of the type usually considered least virulent. After October the allergic response in the lungs complicated the anemic picture.

There is a difference of opinion among clinicians as to the efficacy of the antibiotics in the atypical pneumonias. This case suggests that sputum cultures could differentiate further those due to viruses and those due to bacteria.

In a search of the literature I have not found hemolytic Staphylococcus albus reported as a cause of Loeffler's syndrome.

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